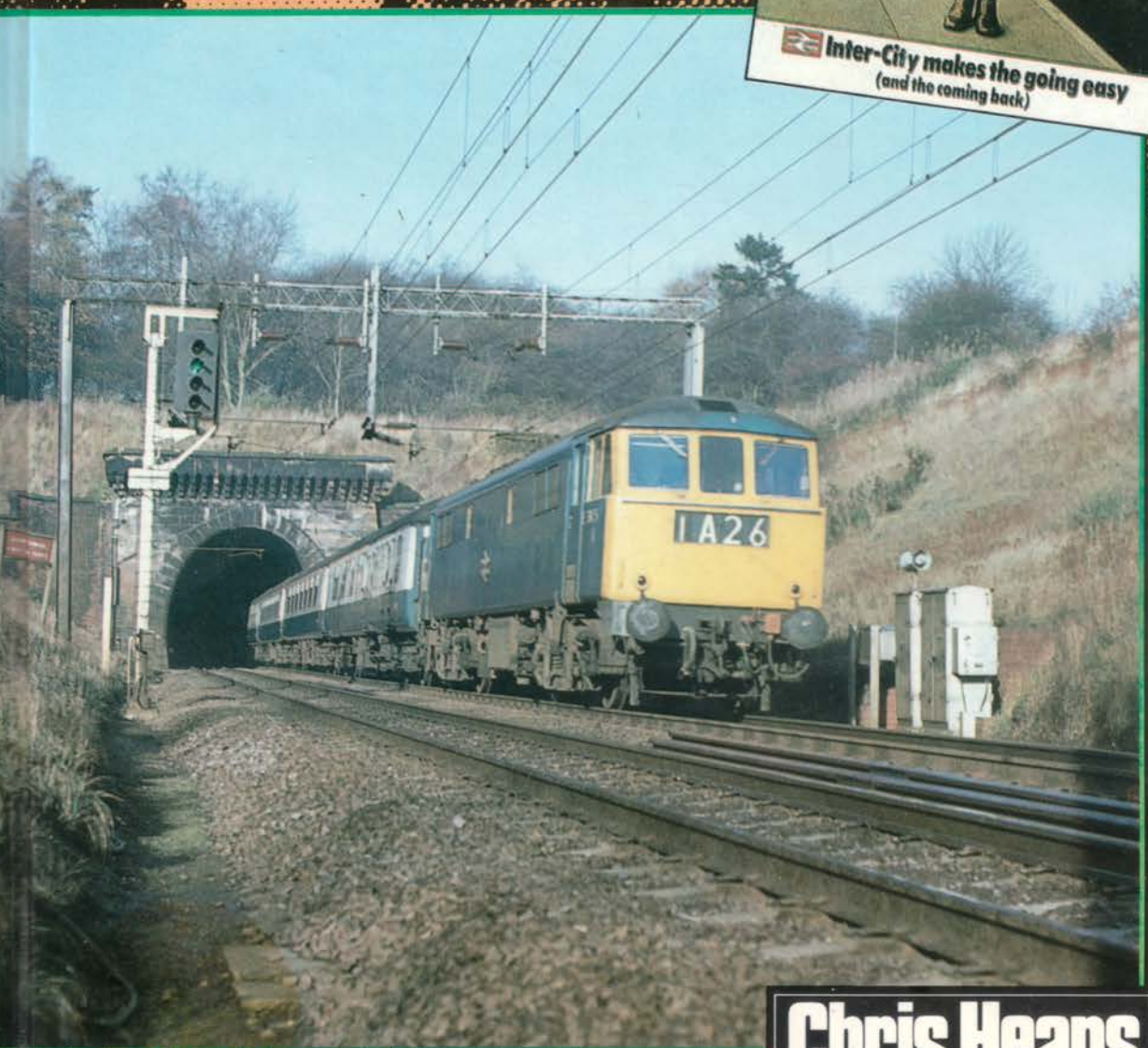
BR DIARY 1968-1977



Chris Heaps

BR DIARY 1968-1977

Previous page:
The traction changeover point for the WCML from July 1973 was Preston, where Class 50 No 418 was photographed departing with the Liverpool portion of the 08.30 Glasgow-Manchester/ Liverpool on 12 July 1973.
D. A. Flitcroft

Below:
On 21 May 1976 the second production HST unit, No 253002, approaches Reading with a shortened test formation, minus buffet car.
D. E. Canning

BR DIARY 1968-1977

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Chris Heaps

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Front cover, top:
In the late 1960s express services were personified by Monica, British Rail's Inter-City girl. After nearly two decades' absence Monica returned to BR, to participate in the InterCity 21st anniversary celebrations in April 1987. *British Rail*

Front cover, bottom:
A Class 86 seen on an up West Coast main line at Kilsby Tunnel on 18 November 1972. *J. H. Cooper-Smith*

Back cover, top:
On 30 March 1974, empty stone hoppers are hauled westwards through Fairwood Junction (Westbury) by Class 52 No 1006 *Western Stalwart*. *Norman E. Preedy*

Back cover, bottom:
HST unit No 253002 seen at speed on the Western Region in October 1976. *British Rail*

Right:
Class 35 No 7096 heads a milk train at Ebbw Junction Newport on 9 July 1972, less than six months before withdrawal. The last 'Hymek' was withdrawn from traffic in March 1975. *J. H. Cooper-Smith*

Contents

Preface 6

1968
The Transport Act of 1968 8
London Transport — The Victoria Line 12
Private and Narrow Gauge Developments 14
The New Euston 16
The End of Steam 18

1969
Towards Inter-City Standards 22
Major Consequences of Beeching 24
Modern Coaches 26
Signalboxes of the Future 28
Lea Valley Electrification 30

1970
Crewe-Glasgow Electrification and the 1970 Timetable 32
Southern Plans for the 1970s 34
Lines Restored 36
Britannia Bridge Disaster 38
Expansion of the Private Sector 40
London Transport C69 Stock 42

1971
High Speed in Scotland 44
Electrification Developments 46
Return to Steam 48
Postal Finale 50

1972
Britannia Bridge Reopens 52
The HST and APT 54
End of a Pullman Era 56
Station Developments 58

1973
New Stations 62
Line Improvements and Increased Speeds 64
End of the Blue Pullmans 66
HST and APT Developments and Problems 68
Class 87 — Britain's First 5,000hp Locomotive 70

1974
The Electric Scots 72
Channel Tunnel — Hope and Disappointment 74
Facelift for Locals 76
Grants and Reprieves: The Railways Act of 1974 78
New Facilities on the Southern 80

1975
A Diary of Disasters 84
Rail 150 86
Western Region Looks to the Future 90
New and Refurbished Stock 93
TOPS Goes Nationwide 96

1976
Timetable Changes and HST 98
Great Northern Electrics 100
Centenary of the 'Long Drag' 102
Freight Developments 104
New Stations and Lines 106

1977
Withdrawals on the Western 110
Silver Jubilee 112
Merseyside Link 114
Narrow Gauge and Private Railway Developments 116
King's Cross Clears its Throat 118

Appendices
1 The Board's Obligations and Constraints 122
2 Grants in 1969 Under Section 39 of the Transport Act 1968 124
3 British Rail Traffic Statistics 1968-1977 128
4 British Rail Assets as at 1 January 1968-1977 128

Preface

Nor shall this peace sleep with her: but as when
The bird of wonder dies, the maiden phoenix,
Her ashes new — create another heir
As great in admiration as herself.

William Shakespeare
King Henry VIII — Act III

The definition of a 'decade' in the Oxford English Dictionary as 'a period of 10 years' permits its use to describe the years from 1968 to 1977 as the decade of the Phoenix so far as British Railways is concerned. From the dying embers and ashes emptied from the last steam locomotive employed in main line service on British Railways in 1968, there developed a modern, high-speed railway on which 25kV electrification schemes were being extended throughout much of the country and on which 125mph High Speed Trains were bringing air-conditioned comfort and unprecedented speeds elsewhere on the Inter-City network.

Despite the problems associated with two changes of government, in 1970 and 1974; and no less than seven Ministers of Transport and three Chairmen of the British Railways Board; the decade that commenced in 1968 was for British Rail a period of growth in confidence and traffic during which strong foundations were laid for further growth in the future. The policy of retrenchment and closure associated with Dr Beeching, and pursued with vigour by his successors in the 1960s, gave way to a more positive attitude on the part of British Rail management as new trains, new services and even new stations provided higher standards of service and speed to attract the travelling public.

Following the precedent set in earlier published volumes in this series, I have not sought to detail every event in every year during the decade, but I hope that my choice of major incidents will adequately and interestingly convey the flavour of the period.

Chris Heaps
Dorking, Surrey
October 1987

1968

This was a climactic year, marking the end of the deficit financing and the preparations for the new relationships with other branches of nationalised public transport created by the 1968 Transport Act.

Sir Henry Johnson, CBE

Right:
This photograph depicts one of the final steam-hauled scheduled passenger trains on British Railways. Before Class 5MT No 45318 was photographed on 3 August 1968 leaving Preston at the head of the 21.25 service to Liverpool Exchange, souvenir hunters or a cautious shedmaster had already removed the original smokebox number plate and shed plate, and by the time the last two scheduled steam-hauled trains reached their destinations their crews had become part of railway history, their autographs preserved in many an enthusiast's archive.
J. L. McIvor

Right:
Crowds to rival the mourners on the last days of main line steam greet the opening train on the Keighley & Worth Valley Railway at Oxenhope on 29 June 1968. Class 2MT 2-6-2T No 41241, then adorned with K&WVR livery but since restored to correct British Railways lined black livery and carrying Skipton shed code 24G, was assisted by 'USA' class 0-6-0T No 72 on the reopening special photographed at the buffer stops. *D. N. Scott*

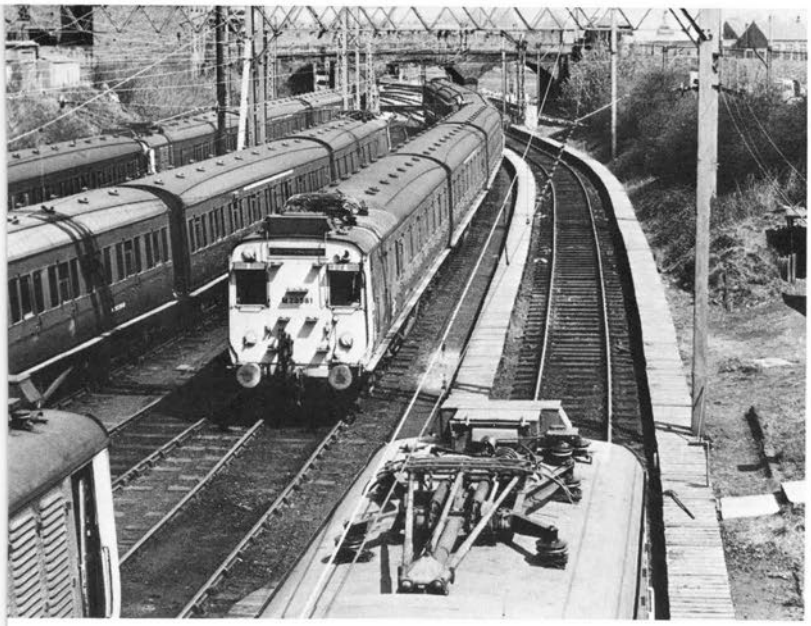
The Transport Act of 1968

Brought to Parliament by the then Minister of Transport, Mrs Barbara Castle, the Transport Act of 1968 constituted the fourth major piece of transport legislation to be approved by Parliament since the end of World War 2. The first of these was the Transport Act of 1947, introduced by Attlee's Labour government despite bitter opposition from the 'Big Four' railway companies and the then Conservative Opposition, which nationalised, on 1 January 1948, the independent railway companies and other transport bodies under the control of the British Transport Commission (BTC) and had as its objective state control and co-ordination of all public transport. Under the BTC were established separate executives to manage the main line railways, public road transport, the docks, canals and London Transport, and on the railways day-to-day control was delegated by the Railway Executive to six regions, which enjoyed very limited autonomy or power to authorise expenditure.

On the election of a Conservative government in 1951 under the leadership of Winston Churchill, a policy of decentralisation was preferred, and the Transport Act of 1953 abolished the Railway Executive and enhanced the standing and independence of the regions. This new independence enabled the Western Region to indulge in the restoration of the chocolate and cream livery for its more important trains, and to experiment with diesel-hydraulic transmission under the Modernisation Plan of 1955, for example.

A second Transport Act under the Conservative administration

Below:
A good example of the rural 'social railway' in respect of which grants were made available by the Transport Act of 1968 — and a line which survives into the 1980s — is the branch between Middlesbrough and Whitby on which a two-car Metro-Cammell Class 101 unit was photographed near Commondale in an area showing few signs of human occupation or rail passenger potential. *D. Griffiths*



Left:
The peak demands of commuter traffic make many urban railways dependent upon government grants. The Manchester-Altrincham and Manchester-Bury lines were two of many in the Manchester area that qualified for grant: on 3 May 1970 1931-built 1,500V dc unit No M28581 was photographed at Altrincham depot in the company of other elderly units. The Manchester South Junction & Altrincham line (8¾ miles) was electrified on 11 May 1931 as the first 1,500V dc system in the United Kingdom, but was converted to a 25kV ac system in 1971.
N. H. Spilsbury

in 1962 abolished the BTC and the railway's statutory obligations as a common carrier, substituted the British Railways Board (BRB) for the Railway Executive and changed the rules relating to the closure of uneconomic lines by giving the power of final decision of closure to the Minister for Transport. The first Chairman of the BRB was Dr Richard Beeching (as he then was) whose 'Reshaping' report published in 1963 recommended and preceded the line closure programme of the mid and late 1960s. It is ironic that consent for the closure of most of the lines so recommended by Dr Beeching (and often implemented after his retirement in 1964) was granted by Ministers in a Socialist

Above:
On the former Lancashire & Yorkshire Railway, a unique 1,200V dc side-contact third-rail system had been introduced in 1913, but the stock operated by the Greater Manchester PTE was built in 1959. A pair of two-car Class 504 units (M77170 leading) are seen passing Bury South signalbox in July 1976.
L. A. Nixon

Above:
'Merseyrail' was adopted as the brand name of the Merseyside PTE, as borne by 1938-designed Class 503 unit No M29289M photographed on 23 September 1976 approaching Birkenhead Park with the 13.02 Liverpool James Street to West Kirby.
Brian Morrison

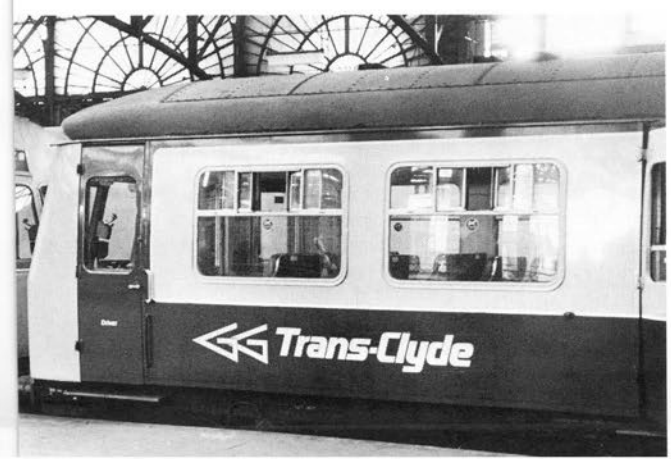
Below:
After a while the PTE systems adopted 'brand names' and/or logos. The Greater Glasgow (later Strathclyde) PTE 'Trans-Clyde' logo is displayed on a Metro-Cammell Class 101 unit photographed at Glasgow Central, and the joint PTE and BR responsibility for local rail transport in West Yorkshire is evident on the side of another Class 101 vehicle, No 51518.
C. P. Boocock/ West Yorkshire PTE

administration, a Labour government under Harold Wilson having come to power in 1964.

Between the end of 1962 and the end of 1968 passenger route mileage fell from 12,915 to 8,471.

Despite the hopes of politicians, neither the 1955 Modernisation Plan nor the Beeching Report could restore British Railways to profit, and the 1968 Act was a further attempt to resolve this apparently intractable problem. For the first time, a distinction was made between the sociably desirable (but unprofitable) part of BR and its commercial sector, and the Act made provision for 'social railway' grants which were to be made available to support individual lines for specified periods. Grant-aided lines came under such detailed Ministry of Transport scrutiny that the BRB excluded some obvious contenders for grant (eg Plymouth-Penzance) to maintain control.

The Act, containing no less than 166 sections and 18 schedules, received the Royal Assent on 25 October 1968, and an initial grant of approximately £62 million was announced by the new Minister of Transport, Richard Marsh, in 1969. A few three-year grants were made, but the majority were authorised for periods of only one or two years. Amongst the largest non-urban grants were those of:



Left:
After the election of a Labour government in 1964, early discussions between Barbara Castle and Dr Richard Beeching had revealed differences of opinion as to the future of the railway system, and on 31 May 1965 Lord Beeching (as he was shortly to become) relinquished the chairmanship and was replaced by the industrious but ruthless railwayman, Stanley Raymond. Sir Stanley (as he became in 1966) abruptly and unexpectedly resigned at the end of 1967 and was replaced on 1 January 1968 by another railwayman, H. C. (Sir Henry) Johnson, seen here with the French Ambassador at Stratford (East London) Freightliner terminal about to wave away the inaugural train on the London-Paris Freightliner service on 24 April 1968. Sir Henry's period in office, which ended in September 1971, was much sunnier than the weather on that day and has been described by railway historian Michael Bonavia as 'something of a honeymoon character and of course, like all honeymoons, was rather brief'. *British Rail*

£295,000 3 years: Glasgow-Perth-Inverness
£400,000 2 years: Paddington-Oxford
£383,000 1 year: York-Scarborough

Larger grants were required for urban services, including sums of £2.5 million for the Glasgow North and South Suburban electric services and a block grant of £9 million for Southern Region suburban services in 1969.

In the 1968 Act, Barbara Castle had also sought other means of dealing with the problem of suburban transport losses. Under the Act, Passenger Transport Executives (PTEs) were created in Greater Manchester, the North East (Tyne & Wear), the West Midlands and Merseyside: later additional PTEs were formed in South Yorkshire, West Yorkshire and Glasgow. The PTEs were given the duty of co-ordinating the local bus and railway services and 'purchased' railway services from BR on a contract basis. The Act gave to the PTEs an entitlement to 75% grants towards approved capital costs, and the much acclaimed Tyne & Wear Metro is a consequence of that Act.

A less welcome consequence of the Act from BR's point of view was the creation of the National Freight Corporation and the transfer to the NFC of all BR's road collection and delivery vehicles and the majority shareholding in Freightliners.

Until Freightliner was restored to BR by the Transport Act in 1978, it lost control of this expanding business which it had developed from the Speed Freight, Condor and other overnight freight services of the late 1950s and nurtured so lovingly since its original introduction in 1963.

The Transport Act of 1968 came into force on 1 January 1969.

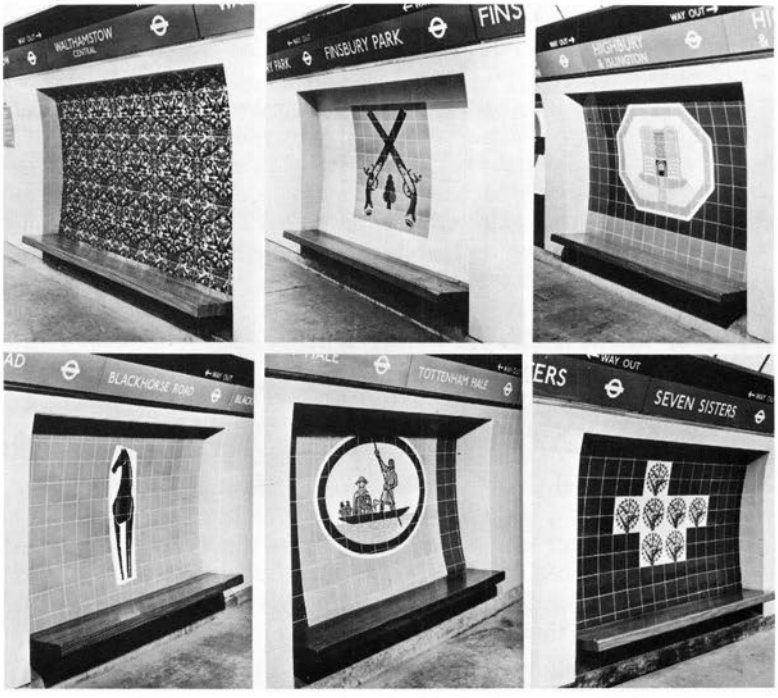
London Transport – The Victoria Line

An underground line linking King's Cross, Euston, Oxford Circus and Victoria had been recommended (with detail variations) as Route C by a working party considering the recommendations of the Railway (London Plan) Committee for postwar London as long before as 1944, but it was not until 1955 that statutory powers were obtained for the construction of the Victoria Line (as it came to be known) following the British Transport Commission Act of that year. Authority for its construction was not given until 1962 when work commenced on the building of the first deep level tube railway in London for over 50 years.

Two experimental tunnels had been constructed in 1960, between Finsbury Park and Manor House, and between Netherton Road (Tottenham) and Manor House, to enable comparisons to be made between cast iron and concrete linings, but construction work had not become obvious to Londoners until a raft was constructed over Oxford Circus in August 1963 to enable a new upper concourse to be constructed in the Underground station.

The first section to be opened for public use was that between Walthamstow Central (formerly Hoe Street) and Highbury & Islington on 1 September 1968. Passenger services commenced on the section thence to Warren Street three months later on 1 December.

Below:
Some of the station tile motifs on the Victoria Line were more obvious than others. Blackhorse Road required no explanation, but probably many passengers failed to appreciate the fact that duelling pistols adorned Finsbury Park because duels had historically taken place in the vicinity; or that 'High Bury' was an old description of a castle on a hill. The attractive incorporation of the letter V in the standard London Transport roundel featured only at the opening ceremonies and was not perpetuated.
London Regional Transport



Above:
The Victoria Line stock, except for curved drivers' windows, externally resembled other modern London Transport stock and saw little service in the light of day. A Victoria Line train is seen on one of its rare forays into the open air at Northumberland Park depot.
J. G. Glover

The important section between Warren Street and Victoria was officially opened by HM The Queen on 7 March 1969, and the final extension to Brixton was opened by HRH Princess Alexandra on 23 July 1971. An imaginative feature of the new line was the provision of special motifs incorporated in the tiling at each station to facilitate identification; the Queen's great great grandmother was commemorated by murals at Victoria. In her opening speech, the Queen recalled that her great grandfather had declared open the first electric tube railway in London in 1890, and after her speech the Queen travelled in a cab of a special train between Green Park and Oxford Circus.

New rolling stock was ordered for the Victoria Line from Metropolitan-Cammell Ltd and 244 motor and trailer cars were delivered in four-car units. For the first time in Britain, the trains were designed and built for automatic operation following successful trials on the Woodford-Hainault branch since April 1964. The new system enabled one-man operation to be introduced, with the driver retaining the authority to start the train at each station and being given the new responsibility of opening and closing the doors.

Private and Narrow Gauge Developments

The Victoria Line was not the only railway line to be opened for passenger traffic in 1968, as this was also an active year for railway preservation societies, both standard and narrow gauge.

The first standard gauge preserved railway, the Bluebell Railway in Sussex, had obtained its Light Railway Order in 1960 and reopened on 7 August of that year. Initially, the track and trackbed were leased from British Railways, not only because BR probably doubted the future success of the venture but also because the Society had insufficient funds, but in 1968 the freehold was purchased from BR and upon payment of the sum of £43,500 the deeds were handed over at a ceremony at Sheffield Park on 27 October.

A second standard gauge preserved railway reopened in 1968, the Keighley & Worth Valley Railway in Yorkshire. Passenger services had been withdrawn by BR on 30 August 1961 and freight facilities followed six months later, although not before a local resident had written (as long before as November 1961) to the local newspaper suggesting the formation of a preservation society. Contracts for the purchase of the freehold of the land at a price payable over 25 years were eventually signed in April 1967 and a Light Railway Order obtained in October of that year. The Transfer Order authorising the BRB to assign responsibility to the Keighley & Worth Valley Railway Co came into force on 27 May 1968 and, after an inspection by Col Robertson of the Railway Inspectorate, the official reopening train was flagged on its way by the Mayor of Keighley on Saturday 29 June 1968. Bathed in sunlight, ex-LMSR Class 2 2-6-2T No 41241 and ex-SR 'USA' Class 0-6-0T No 72 (ex-BR No 30072) in maroon and brown liveries respectively hauled the inaugural train which included an

Below:
In Wales, on the Festiniog Railway, the extension to Ddaullt was inspected by Col Robertson of the Ministry of Transport on 31 March 1968, and passenger services were authorised from 6 April subject to completion of minor work outstanding at Ddaullt. Two months later, 2-4-0ST *Linda* was photographed at Penrhyn Crossing. *Ian Krause*

Left:
Later in the year, in September, 2-6-2T No 7 *Owain Glyndwr* in standard British Rail blue livery with matching coaching stock was photographed in the new Vale of Rheidol platforms at Aberystwyth. *John R. Hume*

ex-Metropolitan Railway Dreadnought coach and two Pullman cars, *Zena* and *Lorna*, in which the celebratory champagne could be served. Ironically, the first day of normal service on the reopened line, Sunday 30 June, coincided with a complete shut-down on the BR network caused by a strike of NUR members. In 1968 the price of the return trip on the line was four shillings (20p)!

From the outset, the Keighley & Worth Valley Railway was not solely a steam-operated line, and operated two ex-BR railbuses, Waggon & Maschinenbau-built units Nos E79962 and E79964. The BR experiment with railbuses which commenced in 1958 was belated, unsuccessful and short-lived but is well commemorated on a branch line of character for which they might have been designed, although they were never so used by BR at Keighley.

Inspired by the efforts of the Bluebell and Worth Valley Railways, numerous other standard gauge preservation societies have since reopened hundreds of miles of restored track in every corner of the country, giving immense pleasure to millions of visitors, enhancing local travel and creating a living museum of railway history.

Railway preservation in Britain had commenced with the narrow gauge lines of the Talyllyn and the Festiniog Railways in Wales. 1968 saw a major step forward in the Festiniog's plan to restore the line throughout from Portmadog to Blaenau Ffestiniog, with the reopening of the two-mile section from Tan-y-Bwlch to Dduallt station through Garnedd Tunnel.

Nearby, at Aberystwyth, British Railways' sole surviving narrow gauge railway, the 1ft 11½in gauge Vale of Rheidol line also entered new territory, when its tracks were realigned into the main station platforms. Its three locomotives, ex-GWR 2-6-2Ts Nos 7, 8 and 9 had the distinction of being BR's sole remaining operating steam locomotives after 1 August 1968, as well as the more dubious honour of being the only steam locomotives to be repainted in standard BR blue livery with double-arrow symbols to match the coaching stock. At least one must be thankful that no nameless bureaucrat considered it necessary for the cast brass numbers on the Aberystwyth locomotives to be replaced by new numbers in corporate style, perhaps fearing confusion with 'Peak' class standard gauge main line diesel locomotives Nos 7, 8 and 9 (the D prefix on diesels having been abolished in August 1968).

The New Euston

The completion of the £160 million London Midland electrification scheme, by which the lines from Manchester/Liverpool to London (via Birmingham and the Trent Valley) were energised at 25kV, was crowned in royal style on 13 October when the rebuilt Euston terminus was opened by HM The Queen. On unveiling the commemorative marble plaque marking the occasion, the Queen commented that 'this opening marks the completion of the most important railway modernisation project of this century'.

Electrification of the first section, between Manchester and Crewe, had been completed in September 1960 but had so overrun its budget that it had caused politicians to look askance at electrification generally, and in particular at expenditure on new stations at Manchester, Coventry and Stafford. Electrification south of Crewe was temporarily stopped by the Minister of Transport in 1960, but was subsequently re-authorised and was completed throughout in 1967. The new 100mph services brought immediate improvements in traffic receipts.

It had been recognised at the outset that the old Euston could not adequately cater for the demands of the new service. The original station had been designed in 1835 and had been extended several times during the 19th century. Despite the glory of the triumphant (and so sadly demolished) Doric Arch designed by Philip Hardwicke, the Romanesque Great Hall and Robert Stephenson's historic train sheds, piecemeal development of the station over 18 acres had resulted in a station both depressing and confusing to the passenger and inconvenient to the operators. Sadly, planning delays and the refusal of the local authority to allow office development over the station, whilst permitting large scale office development elsewhere in the Euston Road, delayed its completion and prevented the rebuilding being self-financing; indeed only later has some limited office construction (including Rail House) been permitted in front of the station.

The reconstruction of Euston included an increase in the number of platforms to 18 from 16 (of which only 12 had been available to passengers) and an increase in platform length,

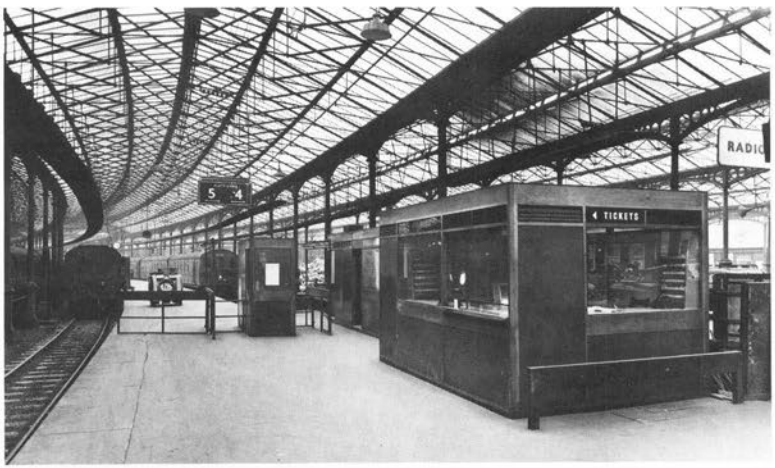
Below:
Had the soot-begrimed Euston arch and supporting wings lasted into the era of stone cleaning that has so transformed the architecture of London, it seems inevitable that it would have been preserved and incorporated into the design of the new station, as its simple elegance was evident even after years of obvious neglect.
British Rail

Bottom:
The exterior of the new Euston. *British Rail*

remodelling of the track layout, resignalling, and the construction of a new light and spacious passenger terminal more reminiscent of an airport. The new track layout extended for half a mile beyond the station area to enable all platforms to be available for arrivals and departures, controlled from a new signalbox which replaced four existing boxes. Parcels and mail were segregated on an upper floor covering five acres, and taxi, commercial and other traffic flows were provided with separate routes below ground.

The main station building fronting Euston Road was faced in white mosaic with black granite columns separating glazed screens. The main concourse, approximately 200ft by 130ft and two storeys deep, was surfaced with marble terrazzo tiles and was bounded by a new travel centre, waiting rooms and refreshment facilities, although the absence of seating accommodation on the concourse itself attracted criticism.

Far more criticism surrounded the destruction of the famous Doric Arch, despite claims that offers had been received to pay for the cost of its careful demolition and reconstruction, and it is interesting to speculate whether this was the catalyst from which the now active railway heritage movement developed. It is not generally realised, however, that the rebuilding plans proposed by the LMS and announced in 1935 had also included its destruction.



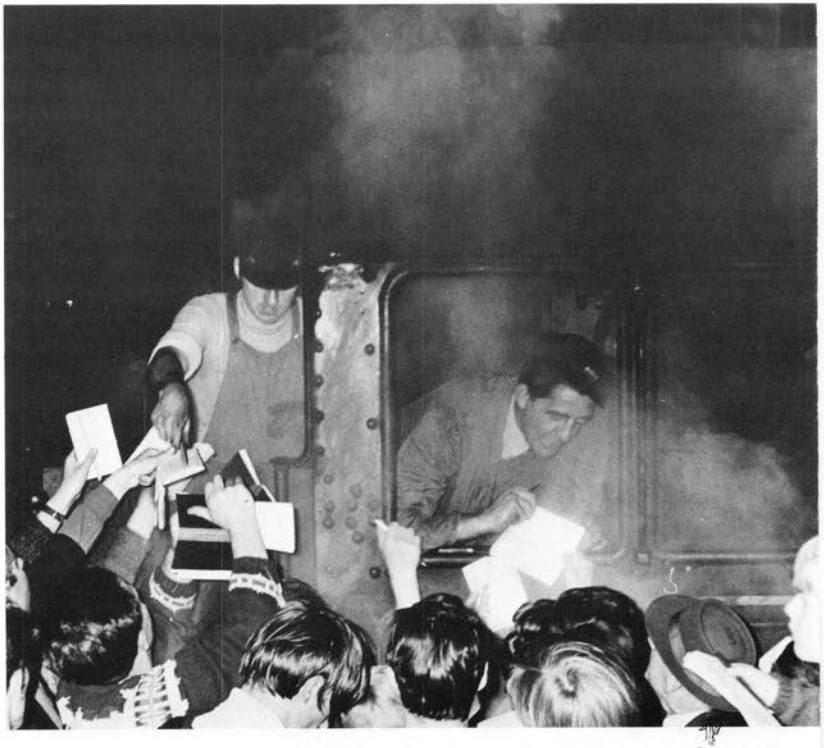
Left:
Inside Euston, Stephenson's train sheds had little chance of survival in a total redevelopment scheme. The possible lack of character of the new airport-style terminus was balanced by the modern facilities and generous passenger circulation areas provided in the new building. *British Rail*

The End of Steam

On the evening of Saturday 3 August, numerous fanatical and many ordinary railway enthusiasts congregated at Preston to celebrate or mourn the final use of a standard gauge steam locomotive in normal British Railways service. Although 'end of steam' specials were to run on the following day, *Flying Scotsman* still had contractual rights to run on BR for a few more years. The future of steam was assured on preserved lines however, but never again would normal service standard gauge trains be rostered for steam working on British Railways.

Steam locomotives had 'officially' been banned on the Western Region as long ago as June 1965, steam working had ceased on the Southern Region on completion of the Bournemouth line electrification project in July 1967, and only in the North West had steam operation continued on any scale into 1968.

The last two normal passenger services — full of enthusiasts — to be hauled by steam locomotives were the 20.48 Preston-Blackpool South and the 21.25 Preston-Liverpool Exchange. The honours fell to ex-LMSR 4-6-0 5MT 'Black Fives' Nos 45212 and 45318. As each arrived from Lostock Hall shed it was greeted by roars of approval, described in an article in the contemporary railway press as a sound 'more usually reserved for a West Ham goal against Chelsea', and each departed to cheers from the assembled multitude. On arrival at Liverpool, No 45318 was serenaded by rousing renditions of 'Auld Lang Syne' and 'God



Right:
At Blackpool South the crew of No 45212 which headed the last scheduled steam-hauled passenger train, the 20.48 Preston-Blackpool, were besieged by enthusiasts on arrival. *Robert J. Clarke*

Save Our Gracious Steam' before retiring from service within a few miles of the location of the Rainhill Trials at which steam had proved its strength 140 years earlier. 'Farewell to steam' specials were organised for the following day by the Railway Travel & Correspondence Society, the Locomotive Club of Great Britain and the Stephenson Locomotive Society, and the 'official' last steam-hauled excursion was organised by British Railways on Sunday 11 August. This special, for which tickets cost 15 guineas (£15.75) 'including luncheon, high tea with refreshments, souvenir tickets and souvenir scroll', was advertised as the 'very last train to operate on standard gauge track headed by a BR steam locomotive'. It ran over 314 nostalgic miles and 10 happy hours, and was hauled between Liverpool Lime Street and Manchester by Stanier Class 5 4-6-0 No 45110, from Manchester to Carlisle (via the Settle to Carlisle Line) by Britannia 4-6-2 No 70013 *Oliver Cromwell*, and on the return journey was double-headed by Class 5 4-6-0s Nos 44871 and 44781.

No less than three of the four locomotives used on the very last service on 11 August have been preserved. No 45110 (now named *RAF Biggin Hill*) is preserved by the Stanier 'Black Five' Preservation Society on the Severn Valley Railway; No 44871 is at Steamtown Carnforth; and No 70013 *Oliver Cromwell* is owned by the National Railway Museum and is presently on loan to Bressingham Hall at Diss in Norfolk. Few enthusiasts in 1968 would have been optimistic enough to envisage that almost 20 years later hundreds of standard gauge steam locomotives would be in regular use on preserved lines, and a few, including No 44871, even welcomed again on selected BR main lines.

Below and Overleaf:
The steam-hauled services on 4 and 11 August had specially-prepared clean locomotives hauling passengers paying to enjoy a ride and not wishing to reach any particular destination, and indeed positively hoping that their destination — the end of steam — would never be reached. Nine specially prepared locomotives were photographed at dawn on 4 August at Lostock Hall MPD prepared for service. Seven days later Class 5MT No 45110 attracted vast crowds at Liverpool Lime Street as it prepared to haul the BR Last Steam Special, the last leg of which is seen being double-headed over Ais Gill summit by sister locomotives Nos 44781 and 44871.
Robert J. Clarke/John H. Bird/ D. E. Canning

1T57

1T57
CARNFORTH

1969

The Board's new financial position should eliminate the stigma which attaches (whether justifiably or not) to recurring losses by a public corporation.

Sir Henry Johnson, CBE

Below:
Television cameras capture opposition to the closure of the Waverley route as members of a protest group are interviewed by Border Television reporters at Hawick on 4 January 1969. The 'coffin' was later sent by train, for delivery to the Minister of Transport in London.
J. Arthur McBarr

Right:
In both design and scale, the new powerbox at Gloucester is in marked contrast to the ex-Midland Railway traditional signalbox that previously controlled the adjoining level crossing. *B. J. Ashworth*

Towards Inter-City Standards

Save on the ex-LNWR main line from Euston, where electrification brought unprecedented improvements in train speeds and regularity of service, the introduction of modern motive power resulting from the 1955 Modernisation Plan (and the total abolition of standard gauge steam) brought few obvious benefits to passengers in the early 1960s. A contributor to the *Railway Magazine* in June 1968 drew attention to the fact that the average speed of the electrically-hauled 15.27 Euston-Heysham parcels train between Euston and Crewe (78.35mph) was bettered by only one passenger train in the whole of the rest of the country.

On the Western Region, journey times on almost all main line

Right:
All services from Euston became electrically-hauled: a Class 86 leaves Watford tunnel with a down parcels train of the type that in 1968 ran at speeds faster than almost all passenger services elsewhere in the country. *P. A. Dobson*

services had actually been lengthened in 1961/62 when numerous intermediate stops were introduced in an effort to reduce the Region's mounting deficit, but by 1969 there were increasingly visible signs of improvement. On the Western Region improvements had actually started in 1968 with the introduction of a 90mph maximum speed limit on the Westbury line, and in 1969 a timing of 3½ hours between Paddington and Plymouth was introduced for the 'Cornish Riviera Limited', the timetable being recast (to revert to the pre-1961 situation) on the basis of independent alternate hourly trains to Plymouth/Penzance and to Torbay.

The speed-up of the 'Cornish Riviera Limited' was made possible by being powered, as it had been in 1968, by two Class 42 'Warship' 2,200hp diesel-hydraulic locomotives working in multiple, and the journey to Penzance by this train was brought to within 5min of the Region's 5½hr target by reducing the overall timing by as much as 25min.

Below:
The Western Region's attempts to reduce journey times commenced with the experiment of converting a limited number of Class 42 'Warship' diesel — hydraulic locomotives to work in multiple on 'crack' expresses. Nos D829 *Magpie* and D870 *Zulu* were photographed within sight of the Westbury White Horse, approaching Fairwood Junction in July 1968 at the head of the 14.30 Paddington-Penzance service; the line to Westbury is visible on the left. *Ivo Peters*

Major Consequences of Beeching

Many line and station closures were recommended in Dr Beeching's report 'The Reshaping of British Railways' published in 1963, and 1969 saw the implementation of two of his major recommendations.

The first week of the year saw the withdrawal of passenger services from the 94 miles of double track between Carlisle and Edinburgh, the 'Waverley Route' of the former North British Railway. At a claimed annual saving in excess of £700,000 (in 1969 terms), closure was probably an economic inevitability, although the line served some of the most inaccessible parts of the United Kingdom and, between Hawick and Carlisle in particular, inhabitants remained almost as dependent upon the railway in 1969 as they had at the time of its opening in 1862. Nevertheless, it was calculated that in 1968 a subsidy of 11 old pence was required for every three pence received in fares.

The last train, the sleeper from Edinburgh on the night of 5 January, was delayed at Newcastleton by locked level crossing gates and massed villagers, but they could only delay the closure for an hour and not for ever. Efforts were made by the Border Union Railway Co Ltd to form a preservation society to purchase the line at a price of £1½ million, but, probably inevitably in the light of such figures and the limited potential, the scheme came to nothing.

The closure of the Waverley Route was significant because of its length and its importance to isolated communities. Of equal significance was the closure to passengers of one of the most modern electrified lines in the country, the ex-Great Central Railway line between Manchester (London Road) and Sheffield (Victoria) electrified at 1,500V dc as recently as 1954.

Below:
Woodhead line passenger trains were in the hands of the Class EM2 locomotives until the service was withdrawn on 5 January 1970. The capable 2,490hp, 90mph machines were then sold to Netherlands Railways for further service overseas. In this view No 27002 *Aurora* awaits departure from Manchester Piccadilly with the 7.10pm to Sheffield Victoria. *John Clarke*

Below right:
Many Woodhead line passenger trains were powered by the smaller Class EM1 (later Class 76) Bo-Bo units as was the case when No E26050 *Stentor* was seen at Penistone on 29 November 1969 during the period between the date of the Minister's consent for closure (August 1969) and the last day of passenger services on 5 January 1970. *I. S. Carr*

Electrification had originally been planned by the LNER in 1936, which had erected some catenary and commenced construction of a locomotive before World War 2. Modernisation of this steeply graded route used extensively for coal traffic had involved the construction of a double-track tunnel through the Pennines at Woodhead over three miles in length and the construction of an additional 56 mixed traffic Bo-Bo Class EM1 locomotives for freight and seven Co-Co Class EM2 locomotives for passenger work. Passenger traffic through the new tunnel was short-lived. In 1959 the through services from Sheffield to Marylebone were withdrawn and in 1965 a number of Manchester-Sheffield services were diverted to run via the Hope Valley line. In August 1969 the Minister of Transport consented to the withdrawal of all through passenger services. Ironically, in view of the complete closure of the line in 1981 because of insufficient traffic, the withdrawal of passenger services was sought in order to increase line capacity for freight traffic. The last scheduled passenger trains ran on Saturday 5 January 1970.

The Class EM2 (later Class 77) Co-Co 2,490hp main line passenger locomotives (Nos 27000-27006) were sold to the Netherlands Railways and shipped to Holland in October 1969. They followed in the footsteps of the 1939 prototype Class EM1 (later Class 76) Bo-Bo mixed traffic locomotive, No E26000, which had been loaned to the Netherlands Railways in 1947 and nicknamed *Tommy*, a name which it later officially bore. *Tommy* was actively engaged in passenger traffic in August and September 1969 when, during the removal of Broomhouse Tunnel on the Midland Line between Chesterfield and Sheffield, St Pancras-Sheffield services were diverted for a short period on to the doomed Woodhead line.

The line was closed completely in July 1981, but is commemorated by Class 76 No 26020 preserved as part of the national collection at the National Railway Museum and by two Class 77 locomotives which returned to the United Kingdom for preservation after being withdrawn by the Netherlands Railways in 1986.

Below:
A line that just survived the year 1969, but like the Woodhead route also closed to passengers in 1970, was the Bangor-Caernarvon branch in North Wales. This line went out in a blaze of royal glory, as the Investiture of the Prince of Wales at Caernarvon Castle on 1 July 1969 necessitated the provision of a number of special trains. These included the Royal Train double-headed by Class 40 No 233 *Empress of England* and No 216 *Campania*, from which the Royal party alighted at Ferodo Halt. *E. N. Kneale*

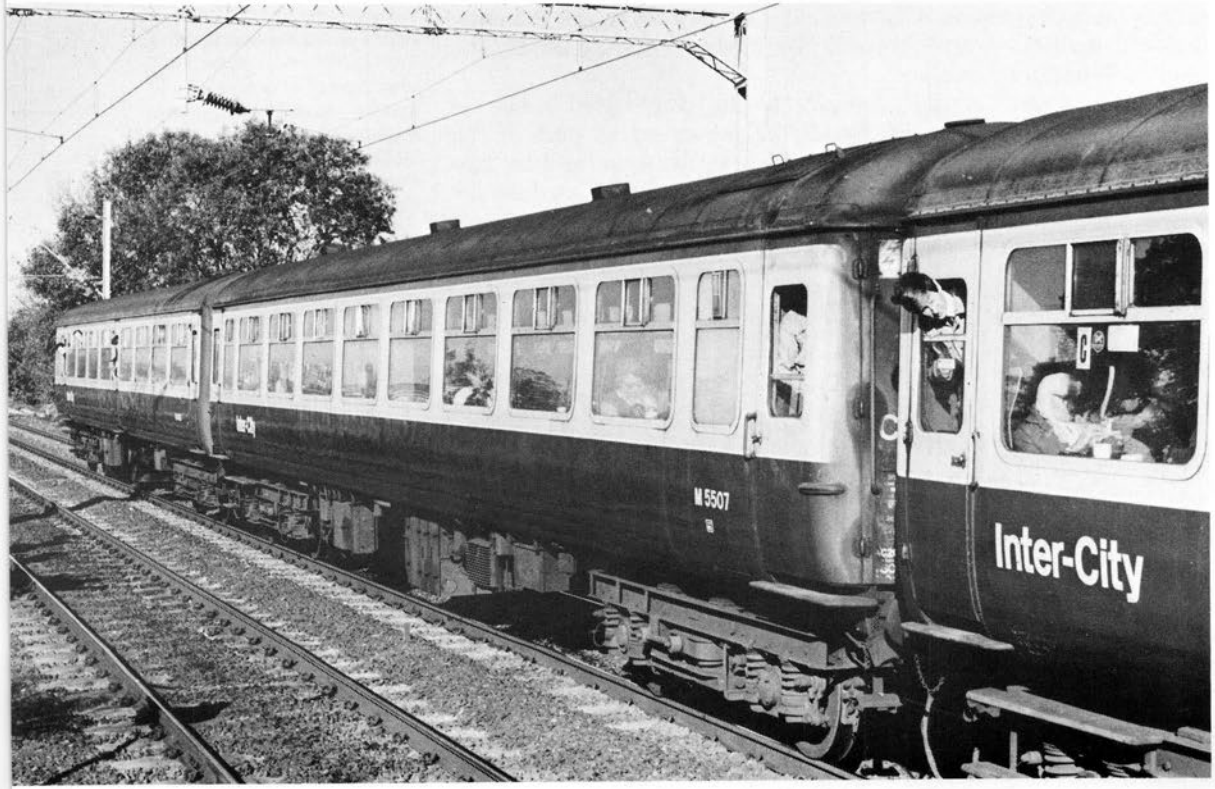
Modern Coaches

In 1969 the Minister of Transport approved a three-year building programme of 600 new Mk 2b coaches for main line use at a total cost of £14½ million.

The original BR coach design introduced in 1951 had continued in production until 1964, but in 1963 the first experimental Mk 2 coach (W13252) had been built at Swindon. Visually distinguishable from earlier stock by its rounded body and curved ends, the prototype was followed by a large build of first and second class vehicles intended for use on the electrified West Coast main line. Internally, these Mk 2a coaches differed little from earlier stock, but the Mk 2b coaches introduced in 1969 marked a significant step forward in coach design.

Pressure heating and ventilation was incorporated for the first time and provision was made for the possible installation of full air conditioning; self-closing internal doors were a new feature; and the wrap-around external entrance doors were enlarged to 3ft in width. The Mk 2b series was quickly followed by the Mk 2c design, delivery of which also commenced in 1969, which was fitted with ducting for air conditioning, although no air conditioning modules were fitted and it was not until 1971 that the air conditioned Mk 2d batch was introduced. The Mk 2b and Mk 2c designs represented a transitional stage towards the air conditioned era of the 1970s, and very many examples remain in use today.

Below:
The air-smoothed design of the Mk 2 coach, embodying an all-steel bodyshell with an integral underframe, is clear in this view of Mk 2b coach No M5507 photographed at Marston Green in standard blue and grey livery.
Michael J. Collins



Above and left:
Pressure ventilation was provided for the first time in Mk 2c coaches, which were also dual heated. Pending the introduction of full air conditioning in the Mk 2d stock, sliding windows of generous dimensions were provided as seen in this photograph of the interior of a Mk 2b vehicle. The Mk 2b and Mk 2c series are easily recognised by their wider entrance doors. *British Rail*

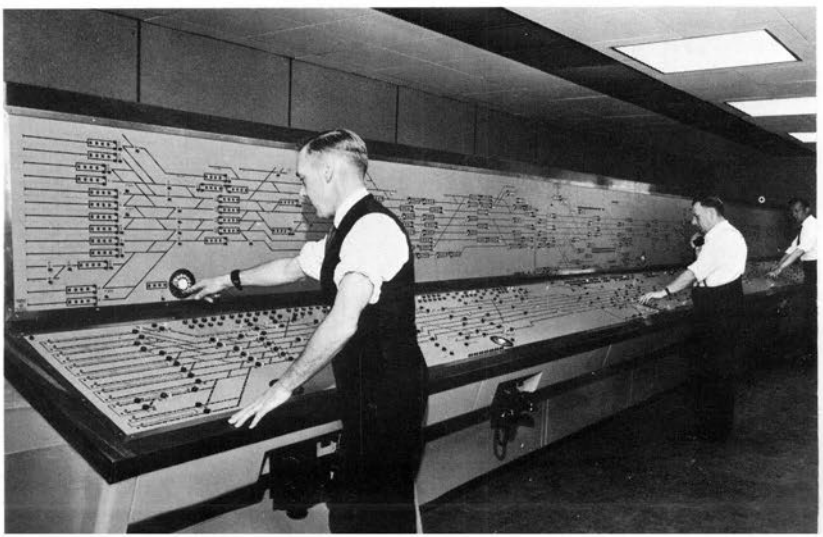
Signalboxes of the Future

It would have been incongruous if the higher speeds and better frequencies of passenger services which were planned in the 1960s had not been matched by modernisation elsewhere, and a field of major change during the period was that of signalling. Although, in retrospect, some signalling schemes may have been over-generous and unnecessarily expensive, the spread of multiple-aspect signalling (MAS) schemes operated from powerboxes controlling hundreds of route miles, made for an improvement to services and allowed track and staff rationalisation.

1969 saw the completion of a number of major schemes, including those at Old Oak Common (outside Paddington), Swindon and Gloucester on the Western Region, and at Trent, Derby and Saltley on the London Midland Region.

The box at Old Oak Common, an extension of a relatively new box opened in 1962, took in the whole of the main line from and including Paddington to Hayes where it met the boundary of the Slough signalbox area. On its opening, Paddington enjoyed the distinction of being the first London terminus not controlled from a signalbox at the terminus itself, the track having been completely remodelled and simplified in preparation for the new box during the winter of 1967/68.

At Gloucester, too, track rationalisation was a feature of the new signalling arrangements. At Gloucester Central (ex-GWR), Platform 1 was extended towards Tramway Junction (the junction with the ex-Midland Railway line and a point of traffic conflict over many years) to enable it to be used by South Wales traffic in both directions, whilst at the former Midland Railway Eastgate station only the island platform was retained for passenger use. The 1969 rationalisation has been followed by even more drastic pruning, and subsequently Eastgate station has been closed and all traffic diverted to an expanded Central station.

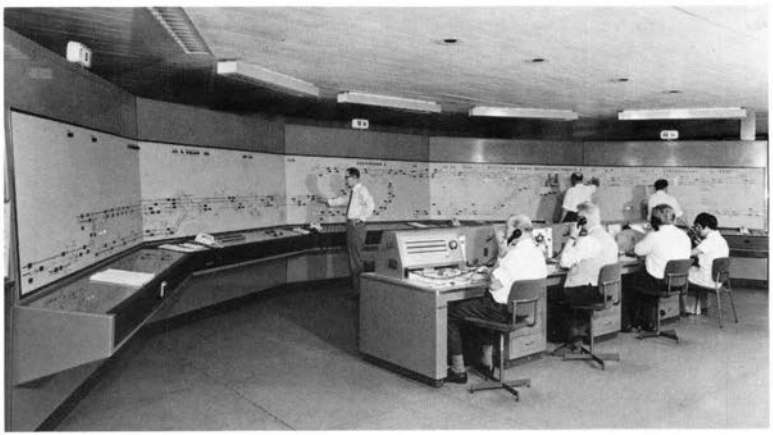


Right:
The 13 platforms in the terminus at Paddington can be seen on the left of the panel at Old Oak Common signalbox and, further to the right, the complex junction near Old Oak itself where the Kensington (Olympia) and Birmingham (via High Wycombe) lines diverge. The trackwork at Paddington was remodelled during the winter of 1967/68. *British Rail*

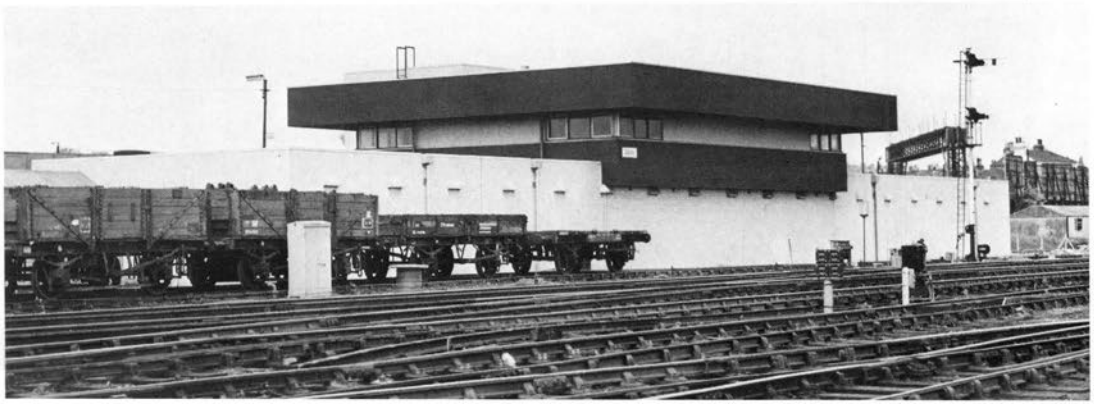
The introduction of a new Swindon box also resulted in the closure of a main line platform, with all passenger traffic being concentrated on the former up island platform (with a new bay for Cheltenham line trains) leaving the former down main platform to be used for parcels traffic. Such rationalisation was possible only because of the increasing use of bi-directional lines, made possible by the introduction of MAS signalling and the ability of the signalman to regulate the flow of traffic over many route miles. However, in retrospect, it can be doubted whether the need to route down traffic wishing to call at Swindon across the up main line has improved reliability.

The Old Oak Common box, completion of which permitted the closure of 18 signalboxes, covered 13½ route and 67¼ track miles. The new Swindon box controlled 87¾ route miles and 161 track miles and the adjacent Gloucester box operated 94¾ route miles and no less than 181¾ track miles. The Midland line resignalling projects at Trent, Derby and Saltley covered no less than 242 route miles and 597 track miles in total and permitted the closure of 180 mechanical boxes with savings of 560 staff.

On completion, the Swindon signalling area extended to the boundary of the Gloucester box (near Kemble) and the Gloucester scheme adjoined the Newport (Monmouth) and the Trent-Derby-Saltley boundary at Blackwell near Bromsgrove. At a stroke, to use an expression of political significance at the time, these 1969 resignalling schemes extended MAS from Chesterfield to a little west of Reading and demonstrated how rapidly modern signalling was being extended over the densely used parts of BR.



Left and below:
Exterior and interior views of the Derby powerbox which came into full operation in 1969. The Derby powerbox is located at the south end of Derby station in the angle between the Trent and Burton lines. The boxes at Derby, Saltley and Trent were all built to the same basic design, with the operating room and staff rooms on the first floor and the relay and telecommunication rooms, workshops, maintenance staff rooms and battery rooms on the ground floor.
Westinghouse/British Rail



Lea Valley Electrification

Electrification of this ex-Great Eastern Railway suburban line from Liverpool Street, a nine-mile section between Copper Mill Junction (Tottenham) and Cheshunt, was inaugurated on 5 May 1969. Although modest in itself, the scheme was significant in that on inauguration, electrification work on BR ceased for the first time since the commencement of the Modernisation Plan in 1955, although it contained seeds of hope for future electrification in providing a proving ground for new Mk 3 overhead line equipment designed to metric standards.

The Lea Valley line was designated for main line passenger and freight use, augmented by a limited suburban DMU service, the route having been omitted from the previous Liverpool Street suburban electrification in 1960. Increased traffic and the desire to eliminate non-electric suburban working from Liverpool Street led to the decision to electrify the Lea Valley line and authority for electrification was given in the spring of 1967. The route between Copper Mill Junction and Stratford (via Lea Bridge) was not electrified, and eventually closed to passenger traffic in 1985.

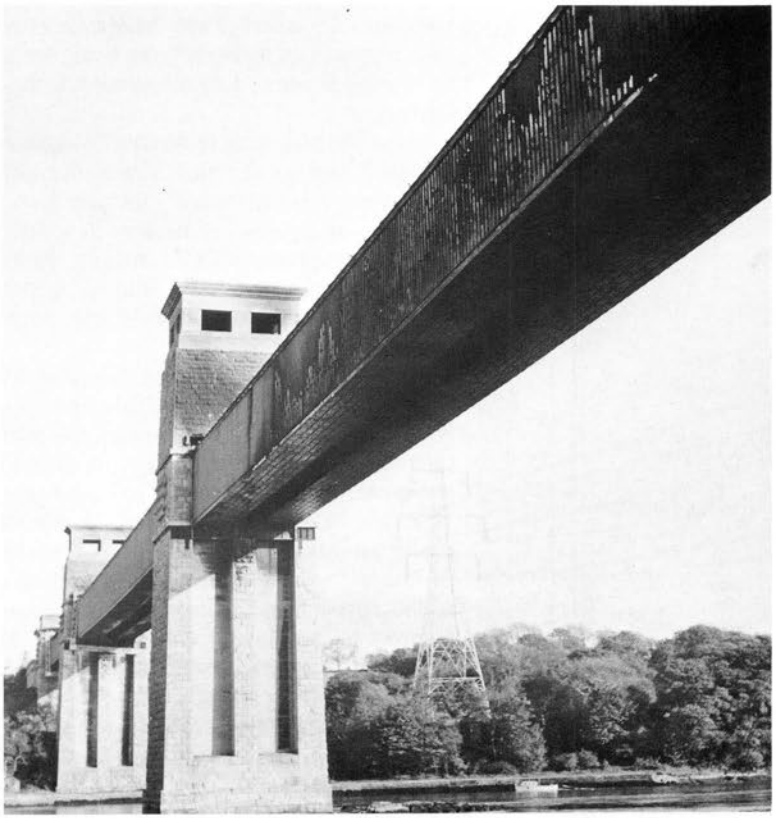
Below:
The old order on the Lea Valley line. A three-car Derby-built suburban DMU approaches Ponders End on 20 April 1968. The crane to the right of the train was used to lift out the Ponders End outer home signal the following day. Preparations for the installation of signal cabling can be seen on the left.
P. Paye

1970

1970 was not remarkable for any one spectacular achievement, but steady progress was made in the improvement of facilities within the limits set by the investment controls and the Board's financial position.

Sir Henry Johnson, CBE

Below:
Diversions, often via the Settle to Carlisle and the Glasgow & South Western lines, were necessary when total line occupation of the Crewe-Glasgow line was called for, as when the track bed near Cambuslang, just south of Glasgow, was lowered to give increased headroom under a number of bridges in July 1971 when electrification was in progress. *British Rail*



Right:
Two days after the Britannia Bridge fire, the blackened structure is seen from the Anglesey side of the Menai Straits. *E. N. Kneale*

Crewe-Glasgow Electrification and the 1970 Timetable

Below:
Pending completion of electrification to Glasgow, authorised by the government in 1970, main line passenger services north of Crewe were powered by Class 50 2,700bhp diesel-electric locomotives, built at Crewe in 1967/68, and working in multiple. On 18 May 1971 Nos 400 and 432 prepare to cross over on to the up line, during single-line working in connection with electrification work near Oxenholme, at the head of the 08.00 Euston-Glasgow.
J. H. Cooper-Smith

The gap in the BR electrification programme marked by the opening of the Lea Valley scheme was closed early in 1970 when, on 23 February, the Minister of Transport, Fred Mulley, gave authority for continuation of the London Midland Region West Coast ac electrification from Weaver Junction to Glasgow Central. At an estimated cost of £25 million plus a further £30.4 million already authorised for resignalling and track rationalisation, the scheme involved 235 route miles and 612 track miles and the conversion of the already electrified section from Eglinton Street Junction to Glasgow Central from 6.25kV to 25kV.

The project authorisation included the provision of 30 additional electric locomotives, and the restoration to traffic of stored Class 83 and Class 84 locomotives to give a total fleet of 227 units. In announcing the extension to complete electrification over the whole 401-mile main line, the Minister anticipated that the return on investment 'should not be less (and may well be substantially above) the minimum rate of 10% which (he) took into account in assessing the programme', and he looked forward to overall journey times between London and Glasgow of 5½hr or better.

Even before electrification, higher speeds to Glasgow were planned and in the new timetable (introduced from 1 May) the fastest-ever trains were scheduled to take less than 6hr for the journey, an average reduction in journey time of 45min. The trains were formed of Mk 2b rolling stock and were scheduled for haulage between Crewe and Glasgow by two Class 50 2,700hp diesel-electric locomotives (introduced in 1967/68) working in multiple.

Increased speeds on the London Midland Region in the 1970 timetable were matched elsewhere. On the Eastern Region, the construction of new embankments alongside the River Ouse near Offord (Huntingdonshire) enabled the main line to be straightened and slewed to raise the permitted line speed to 100mph. North of Grantham speeds were raised following further realignments and extensive earth works and at Newton Hall (north of Durham) new cuttings and embankments removed a notorious speed restriction. These track improvements enabled the Eastern Region to accelerate its services in May 1970, and to mark the event passengers on the first new accelerated trains, the 07.45 King's Cross-Newcastle and the 07.35 Newcastle-King's Cross, were given souvenir cards of the new timings and champagne was served in the dining cars. The highlight of the new service was the acceleration of four East Coast main line trains by approximately 15min between King's Cross and Newcastle, with the fastest

scheduled at 74.8mph, including a stop at Darlington, to give an overall time of 3hr 35min.

By May 1970, 186 miles (69%) of the line between King's Cross and Newcastle had been upgraded to 95/100mph running.

Above and left:
On the East Coast main line the curves alongside the River Ouse at Offord in Huntingdonshire were realigned for 100mph running early in 1970, and at Newton Hall, north of Durham, a new alignment was constructed to remove a 55mph restriction.
British Rail

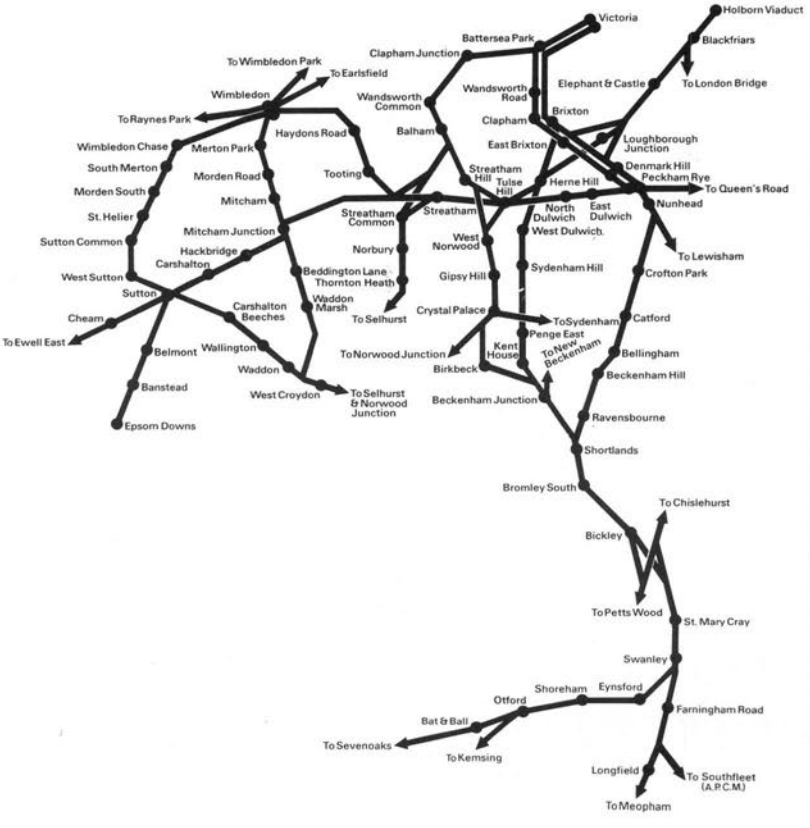
Southern Plans for the 1970s

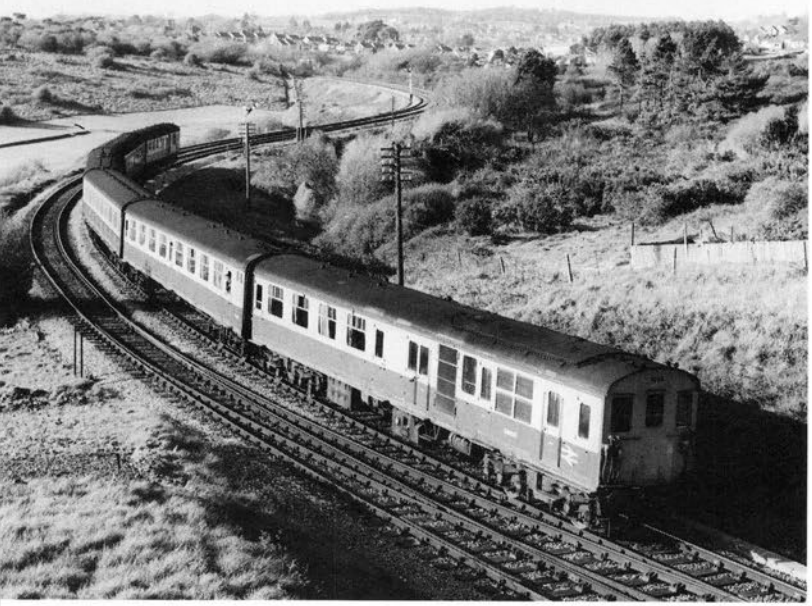
A £220 million corporate plan for the development of the Southern Region was presented to the Minister of Transport at the beginning of 1970. Whilst abandoning earlier expensive projects for additional running lines into its termini, as reduced commuting and a drop in the population of Central London necessitated a thorough review of earlier proposals, the Region sought authority to spend £6 million annually on capital projects to make up for its lack of investment during the previous decade. The Bournemouth electrification apart, no major project had been carried through on the region during the 1960s, whilst its suburban EMU fleet was in dire need of replacement.

Foremost amongst the proposals was the planned reduction of signalboxes on the Region to no more than 13 powerboxes, to be the focus of a new district (area) management structure to replace the three historical divisions so closely linked to the pre-Grouping railways. Powerboxes were proposed for Victoria, Waterloo, London Bridge, Dartford, Chislehurst Junction, Gillingham, Ashford, Brighton, East Croydon, Guildford, Eastleigh, Basingstoke and Feltham.

Above and right:
The exterior of the new signalbox at Guildford, one of only 14 boxes proposed to control the whole of the Southern Region under the 1970 plan. Each was to signal a large area of one of the most heavily trafficked railways in the world. The area to be covered by the proposed Victoria box is clearly shown on the map. *British Rail*

Area controlled by new Victoria signal box



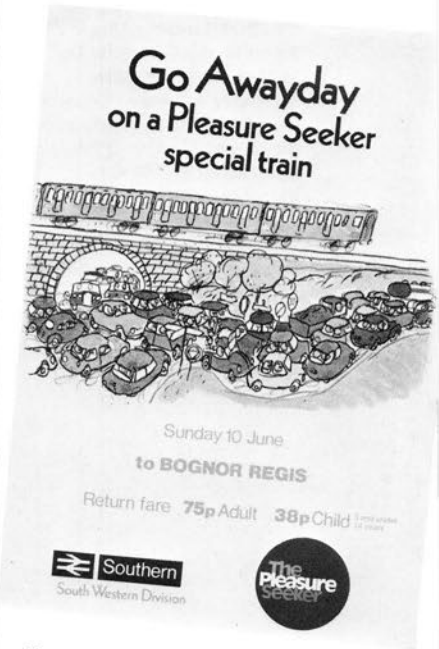


Left:
Electrification of the Tonbridge-Hastings line was not authorised as quickly as was anticipated in the 1970 plan, and the unique narrow-bodied Class 201, 202 and 203 diesel-electric units built in 1957/58 had to soldier on until May 1986. In this view unit No 1033, with power car No S60037 leading, forms the 15.45 Charing Cross to Hastings near West St Leonards.
Peter J. Robinson

Not all these boxes have been built, and other new boxes such as that at Three Bridges have been constructed, but many of the 1970 proposals have been implemented including the total resignalling of the approaches to London Bridge and the whole of the Brighton main line. New suburban EMU stock also featured in the plan and, after a flirtation with the Class 508 units introduced in 1979 and subsequently transferred to Merseyrail, a total of 137 four-car Class 455 electric units with sliding doors and intended for eventual driver-only operation were delivered between 1982 and 1985.

The plan optimistically contemplated electrification of 230 miles of route within the region, including South Croydon-East Grinstead; Oxted-Uckfield; Tonbridge-Tunbridge Wells-Hastings; Tonbridge-Redhill; Reigate-Guildford; Ash-Wokingham; Southampton-Portsmouth; and Bournemouth-Weymouth. Only in 1986 was electrification of the Hastings line completed and electrification of the Bournemouth-Weymouth section authorised, whilst conversion of the East Grinstead (but not Uckfield) branch was not effective until September 1987. The Region's desire to spread the third rail between Tonbridge and Reading (via Guildford) and between Southampton and Portsmouth remains unfulfilled.

The growth of Gatwick Airport as a traffic source was recognised in the plan and in 1970 the Southern Region acknowledged its foreign-speaking travellers at the airport by installing directional signs in French, German and Italian and broadcasting tape-recorded messages in these languages. In the summer, an all-night service was introduced for the first time. Although no new stock was specifically allocated to the Gatwick Airport service and given a distinctive livery until 12 4-VEP units were modified in 1978 and redesignated 4-VEG, this outer suburban stock used on Gatwick services was given a more welcoming appearance during 1970 by the adoption of main line two-tone blue and grey livery first seen on unit No 7808.



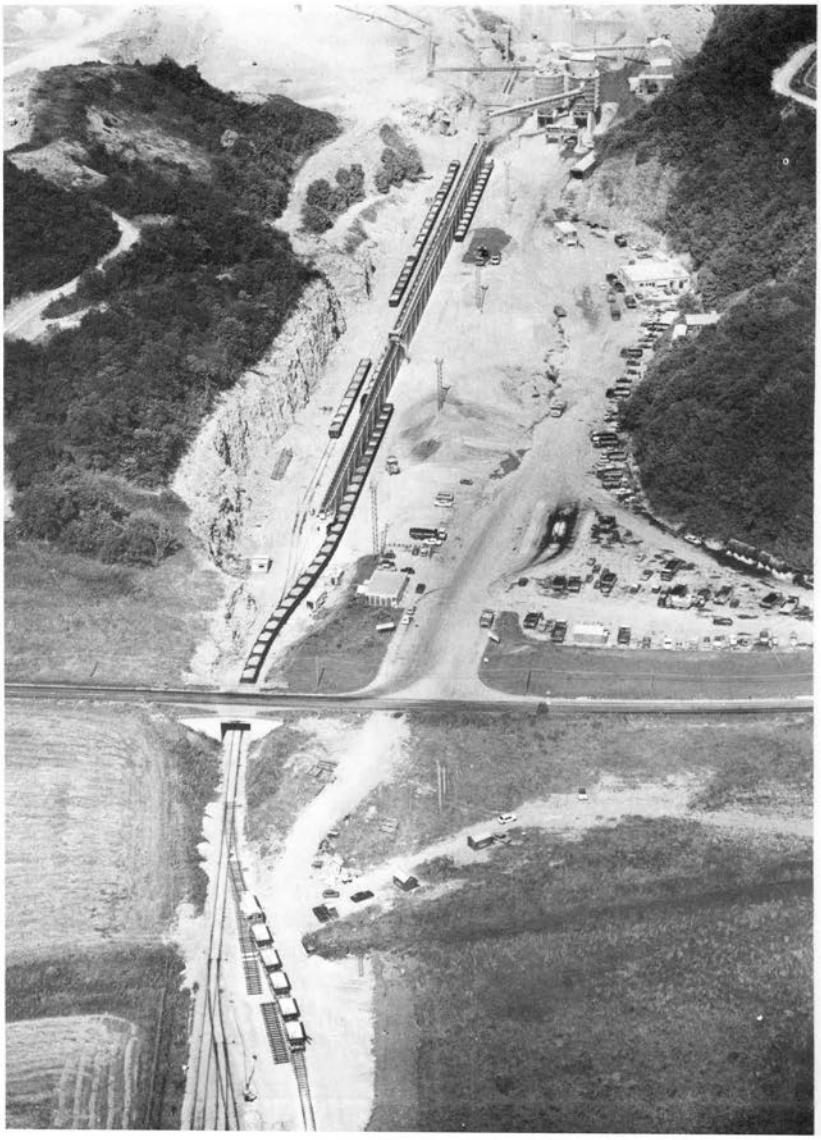
Above:
Surplus commuter stock was often used to provide excursion trains at weekends. This leaflet advertised a Sunday excursion from Clapham Junction to Bognor Regis.

Lines Restored

After the carnage caused by the Beeching Report during the 1960s, 1970 saw an encouraging contrast with the normal closure proceedings in the opening and reopening (albeit for freight only) of new lines.

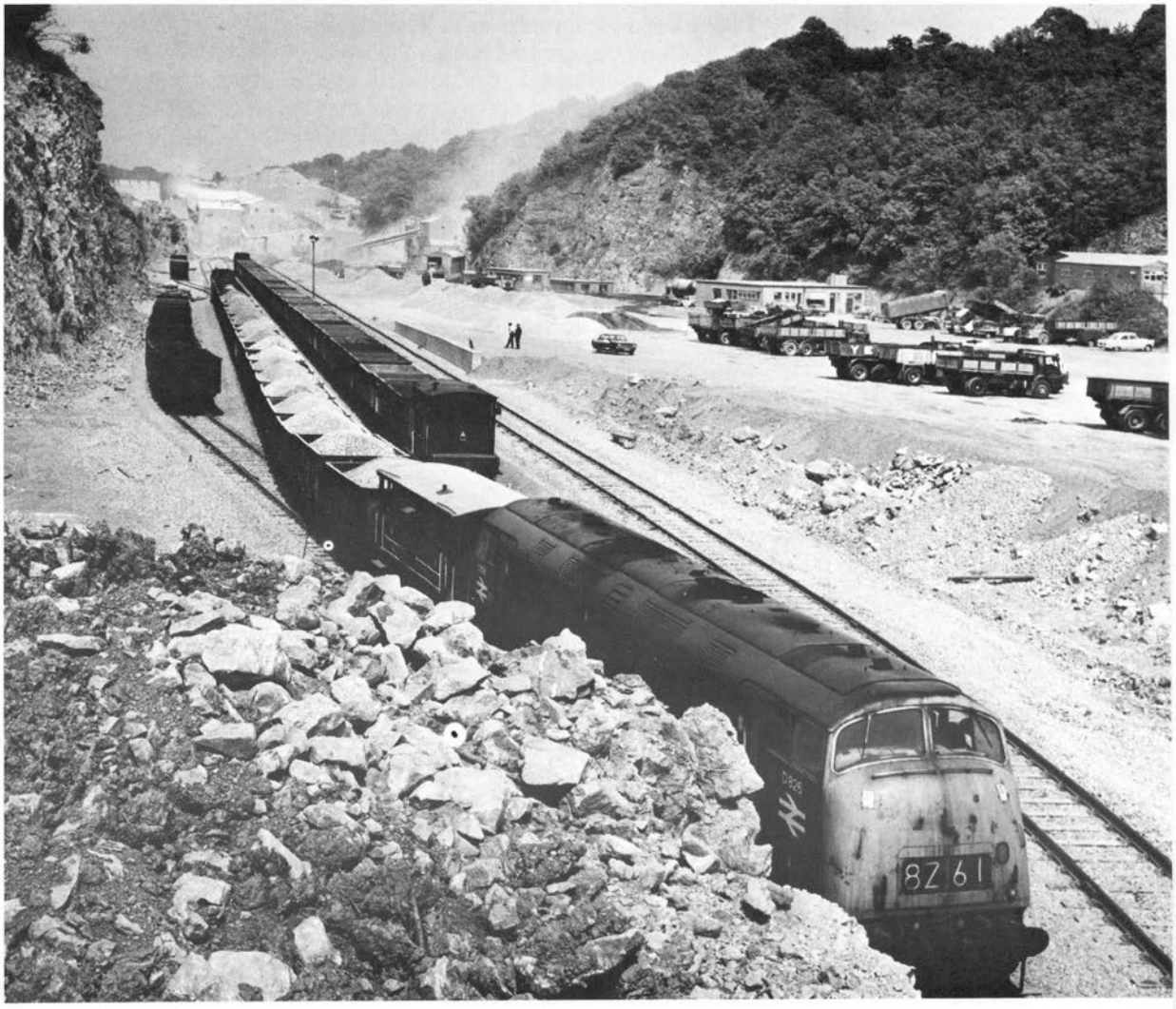
On 13 May, as a result of the phenomenal growth of container traffic at Felixstowe Docks, a new 650yd spur linking the Ipswich to Felixstowe Town line with that from the town via Felixstowe Beach (now closed) to the docks was reopened. This enabled container trains to run direct from Ipswich to the docks without reversal and delay at Felixstowe Town station, and utilised a formation from which the track had been removed as long before as 1898.

Three months later, on 19 August, a brand-new railway



Right:
An aerial view of the Merehead Quarry Terminal as it was nearing completion in 1970. It was opened by Sir Henry Johnson in August of that year. In the early days the stone trains were hauled by Class 42 and Class 52 diesel-hydraulic locomotives. Class 42 No D826 *Jupiter* is seen heading a loaded train away from the terminal in August 1970.
West Air Photography/Foster Yeoman Ltd

three-quarters of a mile in length was officially opened by the Chairman of the British Railways Board, Sir Henry Johnson. This new line was constructed at a cost of £150,000 to serve the Merehead terminal in Somerset, from which limestone was being quarried in vast quantities by Foster Yeoman Ltd for motorway construction, and was linked to the surviving section of the ex-GWR Witham-Cheddar branch. From the outset daily traffic of eight trains formed of conventional four-wheel wagons used the new line. However, Foster Yeoman had already announced plans to purchase high-capacity bogie hopper wagons designed for automatic discharge in a merry-go-round fashion, and obtained a prototype from Metro-Cammell. In concert with BR the company rightly foresaw the new market for bulk stone traffic that was to develop so healthily during the decade. Foster Yeoman has been a leader in this field and in 1986 broke new ground by introducing its privately-owned and American-built locomotives (Class 59) on BR tracks to haul its privately-owned block trains.



Britannia Bridge Disaster

One of the most interesting, historic and impressive railway bridges in Britain, Robert Stephenson's Britannia tubular bridge over the Menai Straits linking the mainland to Anglesey, was destroyed by an act of stupidity on the night of Saturday 23 May 1970 and put at risk the Chester-Holyhead main line and an important rail link with Ireland.

Completed in 1850 at a cost of £674,000, the bridge was constructed of wrought iron tubes of 460ft clear span at a height of over 100ft above the Straits to meet Admiralty requirements — requirements which were also later to determine the design of Brunel's equally famous bridge at Saltash — and during the following 120 years carried loads far beyond those which could have been contemplated by its designer.

Although there had been a fire on the bridge in June 1946 which caused little damage, fire does not appear to have been considered a serious hazard despite the fact that the roof of the tubes were made of steel trusses and timber boarding covered with tarred hessian on which, over the years, additional coats of tar up to ¼in thick had been applied. Disaster struck eventually on the night of Saturday 23 May when two youths using naked lights to search for birds' nests accidentally set fire to the bridge. The fire raged out of control for 9hr, the tubes became white hot and buckled, and metal, timber and molten tar fell into the Straits below. Examination by BR engineers revealed that the intense heat had

Below and Above right: Some stock was removed by road over Telford's equally famous suspension bridge, but by September, after the tubes had been supported on their piers, other items of stock were winched over one at a time and thence hauled by locomotives to Bangor. On 17 September 1970, No 12082 was on this duty. *E. N. Kneale*

caused the metal tubes to melt in places causing considerable sagging in the centre spans. Later cooling had set up stresses that caused the tubes to split adjacent to the piers and to sag by as much as 29in.

Any anxiety that the line would close as a result of the disaster was quickly dispelled in an announcement by the government which made it clear that the new £7½ million container port and facilities due to open at Holyhead less than three months later, and traffic to the nuclear power station on Anglesey, justified the anticipated expenditure of £3¼ million in rebuilding the bridge.

Meanwhile, Anglo-Irish passenger services were diverted via Heysham, a temporary container terminal was set up at Caernarvon on its reopened branch, a limited passenger service on the island was introduced between Holyhead and a temporary platform reopened at Llanfair PG, and locomotives and rolling stock isolated on Anglesey were returned to the mainland by road low-loaders.

The government brooked no delay in approving and authorising the reconstruction. Work commenced on a two-arched steel lattice structure with a clearance of 90ft above the Straits — and incorporating provision for a road link at the insistence of the Secretary of State for Wales — before the end of the year.

Left:
The old signboard at the Anglesey station with 'the longest name in the world' and which reopened temporarily after the Britannia Bridge fire. *K. L. Cook*

Expansion of the Private Sector

Hot on the heels of the opening of the Keighley & Worth Valley Railway in 1968 and the opening of the Dart Valley Railway in 1969, and to provide an outlet for supporters of the GWR and LMS in the Midlands, the Severn Valley Railway obtained its Light Railway Transfer Order in 1970 to enable public services to commence on the line from Bridgenorth.

The Severn Valley Railway, which subsequently extended southwards to Bewdley and then to reconnect with BR at Kidderminster, is now one of the foremost private railways in the country. It obtained its Light Railway Transfer Order on 20 May and a public passenger service was inaugurated three days later on Saturday 23 May. The first train, made up of a mixture of ex-GWR and ex-LMS rolling stock, was hauled from Bridgenorth by ex-GWR 0-6-0 Class 2251 No 3205, and other trains on the opening day were hauled by ex-LMS 2-6-0 Class 4MT No 43106, ex-LMS 2-6-0 Class 2MT No 46443 and ex-LMS 2-8-0 Class 8F No 8233. Ex-GWR railcar No 22 also put in an appearance.

Below:
The inaugural train on the Severn Valley Railway, made up of ex-GWR stock and hauled by Class 2251 0-6-0 No 3205, storms out of Bridgnorth on its way to Hampton Loade on 23 May 1970. *John H. Bird*

Appropriately, it has been the policy of the company to preserve both GWR and LMS coaching stock for use whenever possible with suitable locomotives, and the great majority of locomotives purchased by the railway have come from these stables. Amongst such locomotives are ex-GWR 2-6-2T No 4566, representatives of ex-GWR 'Hall' and 'Manor' classes and BR Standard locomotives of 2-6-0, 4-6-0 and 2-6-4T types. The line has also been host to, and has helped restore, items from the National Collection including ex-GWR 4-4-0 No 3440 *City of Truro*.

Another exciting precedent was set in 1970, when the 2ft 6in gauge Welshpool & Llanfair Light Railway inaugurated 'foreign' traction with its use of an Austrian 0-8-0T No 699.01. Originally constructed in 1944 for German military use as an 0-8-0 tender locomotive for service in occupied Europe, it was rebuilt as an 0-8-0T in 1957 by the Styrian Provincial Railways near Graz. Use of this locomotive by the Welshpool & Llanfair Railway was particularly apt, as the railway had earlier resolved its chronic shortage of passenger coaches by importing coaching stock from the Austrian Zillertalbahn.

The policy of preserving European (non-British) locomotives was later adopted with a vengeance by the Nene Valley Railway (near Peterborough) which since its formation in 1974 has become the home of a large number of continental locomotives and a variety of continental rolling stock.

Below:
On the Welshpool & Llanfair Railway, the newly imported 0-8-0T No 699.01 was paired with Austrian rolling stock when photographed on 2 May 1970 with the 14.00 service from Llanfair. This locomotive was later named *Sir Drefaldwyn*. *R. I. Cartwright*

London Transport C69 Stock

Despite its classification suggesting a proposed introduction date of 1969, the first of London Transport's new units for the Hammersmith & City and Circle Lines did not enter service until the autumn of 1970.

Superficially similar in appearance to the 'A' stock delivered in 1960 for the Amersham Line, but intended for more intensive use on Central London duties, the most obvious difference between the designs was the provision of four sets of double doors in each car of C69 stock to facilitate passenger movement and reduce station stopping times. The new stock was designed for driver-only operation, although it is doubtful if London Transport anticipated that this facility would remain unused until the early 1980s when final agreement with the relevant rail unions eventually permitted its introduction.

The new stock was finished in accordance with the then current London Transport style of unpainted aluminium alloy, and was designed for a maximum speed of 60mph, unlikely to be achieved in normal use on the Circle Line.

Below and Below right: Interior and exterior views of London Transport C69 stock, a train of which is seen approaching Farringdon on a Barking service on 5 August 1976.
Panad Publicity Services Ltd/ J. G. Glover

1971

The results for 1971 show clearly how vulnerable the Board's business is to outside events beyond its control.

Rt Hon Richard Marsh

Below:
No 6000 *King George V* seen here on its journey from Hereford to Tyseley emerging from Patchway Tunnel. *John H. Bird*

Right:
Withdrawals of electric stock in 1971 included the unique 4DD units Nos 4001 and 4002 (later renumbered 4901 and 4902) which were photographed passing Waterloo East on 12 May 1969. *John H. Bird*

High Speed in Scotland

The most exciting innovation in the 1971 timetable was the acceleration of the regular Glasgow-Edinburgh service made possible by the use, for the first time in the UK, of standard train sets powered by diesel-electric locomotives at both ends and wired for multiple-unit control. Previously the service had been operated by increasingly elderly and uncomfortable Swindon-built DMUs, and on the introduction of the new service the journey time between Scotland's two major cities was cut from 55min to 43/45min (inclusive of two intermediate stops). To work the service, 12 Class 27 1,250hp Birmingham Railway Carriage & Wagon Bo-Bo locomotives and 36 Mk 2a coaches were allocated initially, and signalling work was carried out to enable 90mph maximum speeds to be reached giving an overall average speed between Glasgow Queen Street and Edinburgh Waverley in excess of 70mph.

The new service was more than a match for the parallel motorway, and in an article describing exhilārating runs Cecil

Below:
A 1956 Swindon-built 'inter-city' DMU is photographed heading into the sunset of its life past Princes Gardens, Edinburgh, towards Glasgow in April 1971. *M. Dunnett*

J. Allen commented later in the year that 'it was stimulating indeed to see all concerned, engine crews, signalmen and station staff, on their toes to ensure reliable time-keeping'.

The Class 27s shouldered the burden of this important Scottish link until replaced from 1979 by Mk 3a stock powered on a push-pull basis by Class 47/7 locomotives.

Left:
The new order cometh on the Edinburgh-Glasgow route. On trials on 13 April 1971, Mk 2 coaches are marshalled between Class 27s Nos 5404 and 5411 seen passing Saughton Junction.
G. A. Watt

Below:
The push-pull character of the new Edinburgh-Glasgow service is more obvious in this view of Class 27s Nos 27205 and 27204 photographed powering the 16.30 from Edinburgh past Bo'ness Junction on 28 May 1975.
G. A. Watt

Electrification Developments

1971 was a 'good year' for electric traction in the UK. Of greatest importance were the statements made by the Rt Hon Peter Walker, Secretary of State for the Environment, on 18 August. He announced government approval for the British Railways Board's proposals to electrify the former Great Northern Railway suburban lines from King's Cross and Moorgate to Royston via Welwyn Garden City and via Hertford North, supported by government grants of 75% of the cost. The electrification extended over 70 route miles and 211 track miles at an anticipated cost of £35 million, and was to be carried out on the 25kV overhead system, except between Drayton Park and Moorgate on the former Great Northern & City Line where the third-rail collection system was required because of limited clearances. Although built at the turn of the century to main line profile in optimistic anticipation of through running to the Great Northern, no such running powers were ever obtained and the line from Finsbury Park to Moorgate was taken over by the Metropolitan Railway in 1913 and eventually came to be operated (using tube-sized stock after 1939) as part of the London Transport Underground network. Sadly, the end of London Transport ownership was marked by the horrifying and unexplained crash at the Moorgate terminus in 1975.

On 18 August 1971 the Minister also had good news for London Transport when he announced that the government would provide 75% of the anticipated cost of Stage 1 of the Fleet Line (later Jubilee Line) between Baker Street and the Strand (Charing Cross). A little over a month earlier, the 3½-mile extension of the Victoria Line to Brixton had formally been opened by HRH Princess Alexandra.

The type of suburban stock likely to be built for the Great Northern electrification scheme was unveiled in 1971, when a four-car prototype of a new generation of stock was delivered for trials on the Southern Region, with the intention that similar vehicles should be constructed for both third-rail and overhead

Below:
The prototype 'suburban unit of the future' was unveiled in 1971 as Southern Region 4PEP unit No 4001, photographed on a trial run at Alton on 25 August 1971. The features of pressure ventilation and sealed windows were not perpetuated in later production stock, but the general internal design principles of the prototype formed the basis for the design incorporated in the standard production units of Classes 313, 315, 507 and 508. *C. Small/British Rail*

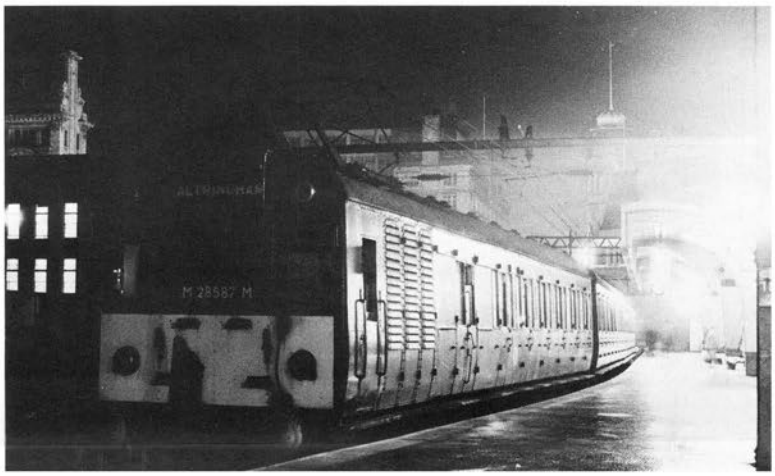
systems. 4PEP sets Nos 4001 and 4002 and the later two-car set No 2001 incorporated sliding doors, increased standing space for passengers but fewer seats, to provide an overall increase in passenger capacity if not necessarily in passenger comfort. The space alongside and behind the driver's cab was also made available for passenger use as the units contained no designated guard's van, no doubt in anticipation of ultimate driver-only operation. The coaches had corridor connections between intermediate coaches but not at the driving ends, although emergency end doors were provided.

None of the windows in the passenger compartments opened; and pressure ventilation was fitted, assisted by fans blowing air through underfloor ducts. A public address system was provided for the first time in suburban stock and another first on BR was the powering of every axle individually, a feature already familiar in London Transport practice.

The 4SUB units intended to be replaced by the 4PEP and its successors had to soldier on for many years pending evaluation of the prototypes, but 1971 saw the end of other reliable workhorses of the Southern Electric system, the 2BIL and 2HAL outer suburban units introduced from 1935. To mark the end of their active service, three 2BIL units (Nos 2140, 2111 and 2135) broke new ground on a final 'fling' on 25 September that included visits to the ex-LMS North London line, the modernity of Euston and the decaying elegance of Broad Street.

A unique Southern Electric train was lost in 1971, when the eight-car double-deck train consisting of two four-car units introduced by O. V. Bulleid in 1949 was withdrawn without prior warning on 1 October. Originally Nos 4001 and 4002 (and renumbered on the introduction of the 4PEP units to 4901 and 4902), the 4DD units (as they were classified by the SR) provided additional seating capacity, but at the expense of increased station time for loading and unloading. The two units spent the 22 years of their working lives in peak hour service exclusively on the South Eastern Division of the Southern Region working from Cannon Street and Charing Cross.

A 2BIL unit (No 2090) has been preserved and restored to working order as part of the National Collection; and a number of double-deck coaches survived into 1986 in private hands but have yet to be restored.



Left:
Manchester South Junction & Altrincham motor coach No M28587M was also in the twilight of its life when it was photographed at Manchester (Oxford Road) on 4 March 1970. *Dr R. Elsdon*

Return to Steam

Elegance, but most certainly not decaying elegance, was epitomised by the return to steam on BR metals of preserved ex-GWR 'King' 4-6-0 No 6000 *King George V* on 2 October 1971. After the official end of steam in 1968, only Alan Pegler's locomotive, ex-LNER Class A3 4-6-2 No 4472 *Flying Scotsman,* had been allowed, on account of prior contractual rights expiring at the end of 1971, to blacken BR's modern image by steaming on the main lines, and this famous locomotive had left England on its ill-fated tour of the USA in the autumn of 1969. Even in 1971, when consent was granted to H. P. Bulmer Ltd of Hereford for the locomotive to venture on to BR metals again, BR spokesmen were at pains to stress that the permitted runs were not to be taken as a precedent and were intended merely to 'assess the practical difficulties in operating steam-hauled trains over British Railways'. In an article published only in June 1971 in the journal of the Transport Study Society, the Executive Director of Systems & Operations at the British Railways Board had stressed the impracticability of such proposals.

The subsequent development of restored steam running, now actively supported by BR, is proof that such difficulties were not insurmountable.

Officially intended for preservation as part of the National Collection, agreement was reached in 1968 between the British Railways Board and Swindon Corporation (the joint owners) and Bulmers for the restoration of *King George V* to working order on the understanding that it could remain in Hereford for a minimum period of two years (later extended for a further three years) and steamed on three-quarters of a mile of private track, hauling the company's recently purchased Pullman Cars. On 8 August 1968, and no doubt suitably fortified by the restorer's own brew, volunteers, gathered by advertisements in the *Times* and elsewhere, hauled *King George V* out of the Swindon stock shed on its way to restoration. A little over three years later glorious sunshine celebrated the return of No 6000 to passenger service on its run from Hereford to Newport and thence via Oxford to Tyseley depot where it was to be 'at home'. Later in the week the

Right:
The importance of the return to main line steam of No 6000 *King George V* in 1971 justifies the inclusion of a photograph of this historic breakthrough. With brasswork sparkling in the autumn sunshine, the train was photographed hauling the Bulmers Pullmans west of Severn Tunnel Junction on its way from Hereford to Tyseley (via Newport and Oxford) on 2 October. *John H. Bird*

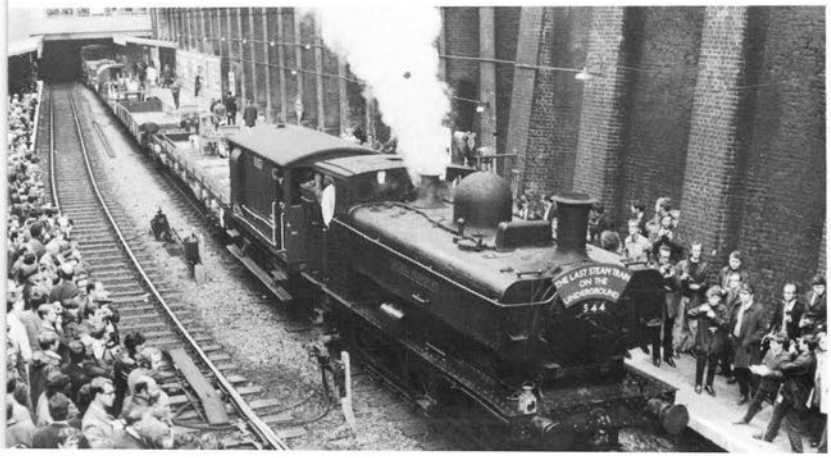
locomotive and 'Cider Train' travelled to Kensington Olympia for a two-day exhibition, then on to Swindon and finally in triumph back to Hereford.

The steam ban had been successfully broken. Despite outbreaks of lineside trespass that continue to plague steam excursions and endanger their very existence, *King George V* had proved that restored steam running was not incompatible with a modern commercial railway, and modern-day enthusiasts should be forever grateful to Bulmers and the BR officers who made it possible in 1971.

It was ironic that steam should have returned to BR only months after the last steam locomotive had ceased operating in that empire of electrification, London Transport. Although steam passenger services, albeit hauled by BR-owned locomotives, had ceased on London Transport in 1961 on completion of the Amersham electrification scheme, steam locomotives had been retained for use on works trains. As its ex-Metropolitan Railway locomotives had fallen due for withdrawal at the end of the 1950s and the beginning of the 1960s, ex-GWR Class 5700 0-6-0PT had been purchased from BR: it was perhaps apt that GWR locomotives should have ended the steam era on London Transport in view of the fact that the GWR had provided the broad gauge locos for the Metropolitan Railway on its opening in 1861.

'The last steam train on the Underground' was hauled by No L-94 (formerly BR No 7752) from Moorgate to Neasden depot where sister loco No L-90 (formerly No 7760) was also in steam.

A number of ex-London Transport pannier tanks have been preserved, and in some cases have operated on preserved lines in LT livery.



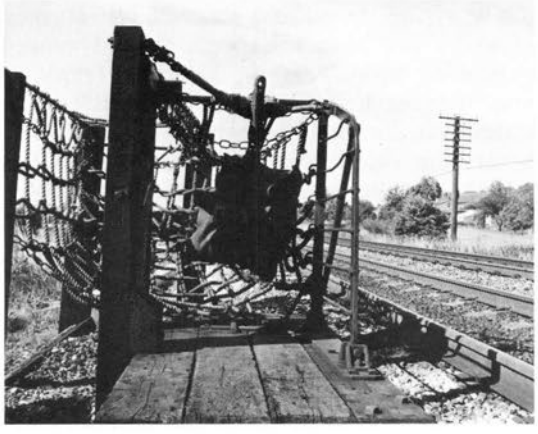
Left and Below left:
The last standard-gauge locomotives in service on public tracks in Great Britain — the ex-GWR pannier tanks purchased by London Transport for tip workings and engineers' trains — attracted little attention when on normal duties, as when No L93 was photographed in sylvan surroundings near Croxley in February 1967. However, crowds to match those gathered to welcome *King George V* assembled at Barbican when No L94 hauled 'the Last Steam Train on the Underground' on 6 June 1971. *Ian Krause/Gary Merrin*

Postal Finale

Lineside apparatus for exchanging mail with passing travelling post offices ceased operation at the beginning of October 1971, after the system had been in use for 133 years.

Although travelling post offices (TPOs) continue to run on BR, all postal collection and delivery is now made whilst trains are standing at major stations, as TPO reorganisation into areas based on postal codes has obviated the need for small-scale collections and deliveries at numerous points throughout the network. In its heyday before World War 2, over 240 sets of lineside apparatus had been installed, but the last transfer into a train and the last collection from a train took place near Penrith in Cumberland on 1 and 4 October 1971 respectively. As the *Railway Magazine* commented, 'the travelling postmen no longer have to master the tricky procedure of making ready their apparatus for exchange at full speed, nor do trackside colleagues have lonely vigils to see pouches safely gathered by and retrieve those whipped clear of the train as it rushes past into the night'.

Below:
The postal apparatus for the transfer of mailbags to and from speeding travelling post offices (TPOs) were photographed for posterity near Penrith before the last collections and deliveries took place on 1 and 4 October respectively. The associated apparatus clearly visible on vehicle No M80401 is no longer required and has been removed from all TPO vehicles, although vehicles Nos 80400-80402 still sport the bodyside recess. *J. A. Senior*

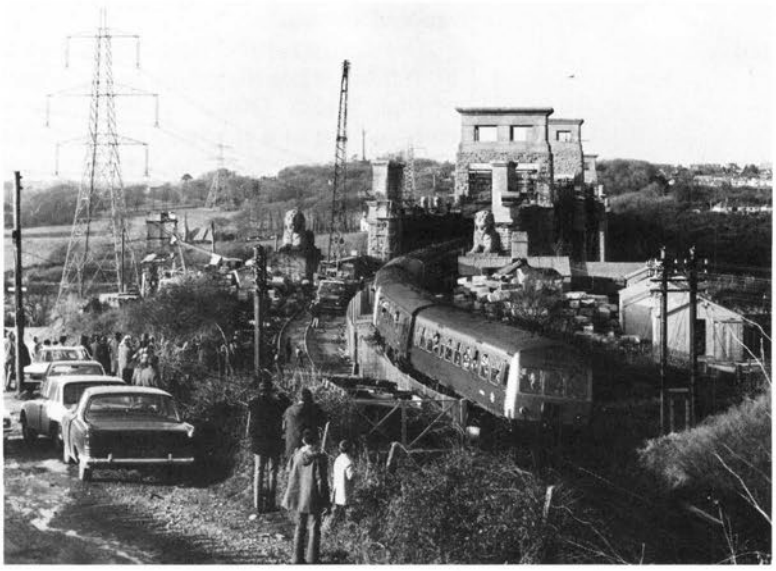


1972

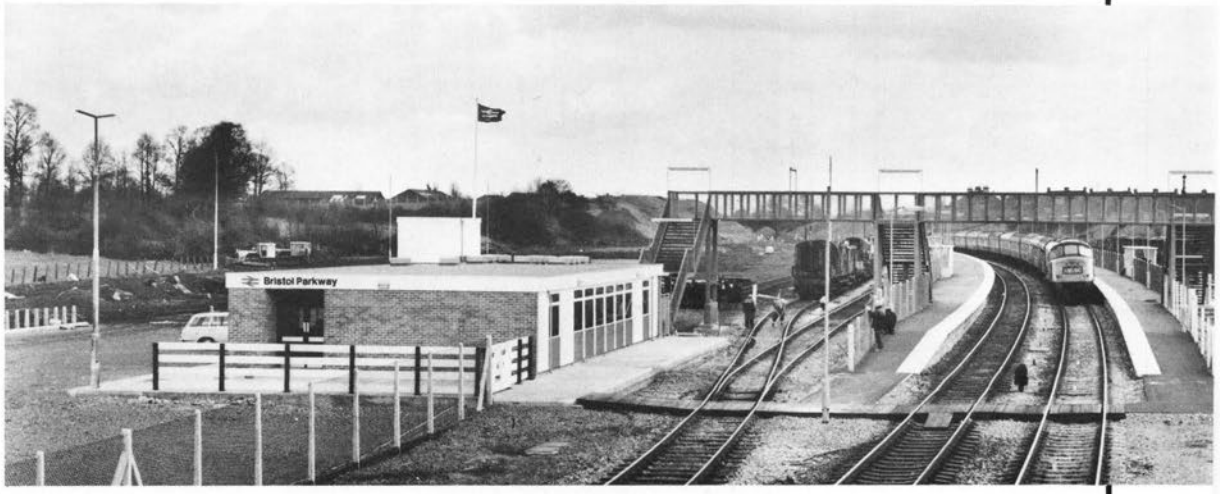
It has been a 25-year task to bring the industry to the more compact and efficient undertaking we have today. At the start of its second quarter-century, British Rail is in better shape to meet future challenges.

Rt Hon Richard Marsh

Right:
Crowds gathered to witness the passage of the first passenger train over the Britannia Bridge after reopening, a heavily-loaded DMU photographed leaving the bridge on the Caernarvon side, on 30 January 1972. *E. N. Kneale*



Below:
The passenger facilities at the new station of Bristol Parkway, photographed immediately before its opening, were concentrated in a separate building adjacent to the car park. *British Rail*

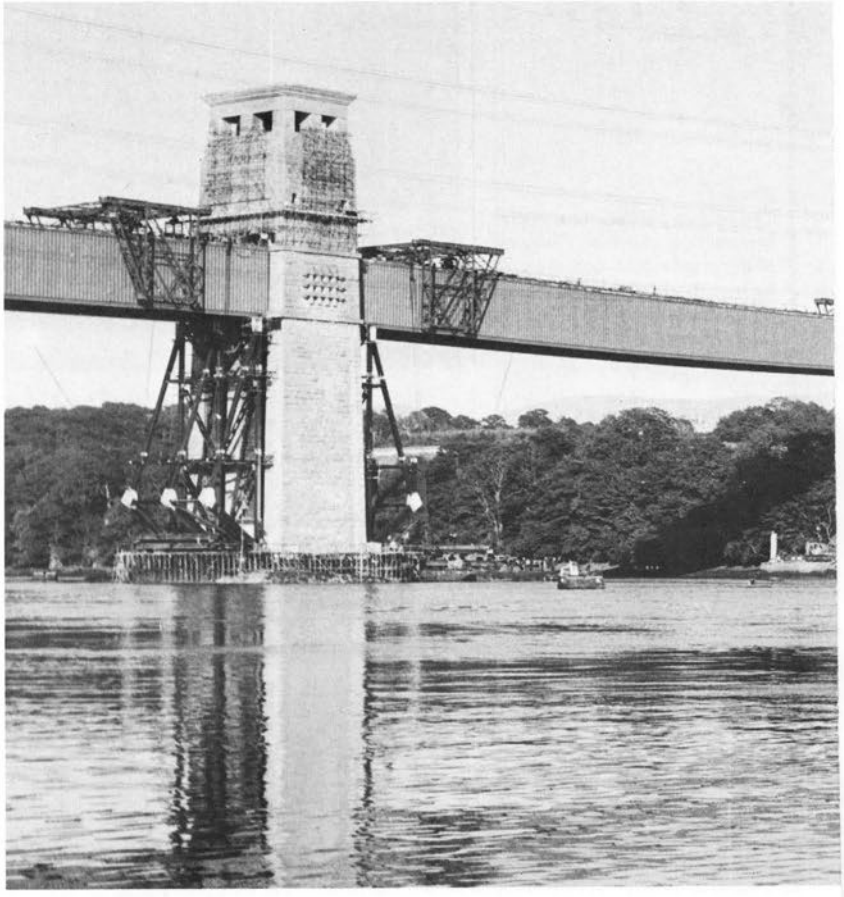


Britannia Bridge Reopens

Rail traffic between the mainland, the Isle of Anglesey and the port of Holyhead was restored on 30 January 1972 on the opening of the reconstructed Britannia Bridge over the Menai Straits, less than two years after its destruction by fire.

Although Stephenson's wrought-iron tubes had survived the May 1970 fire, their continuity had been destroyed by splits in the metal caused by the stresses of intense heat and subsequent cooling, and it was thought necessary to remove the famous tubes entirely. One was kept in short-term use, after temporary remedial work, while the permanent replacement deck and track were erected alongside.

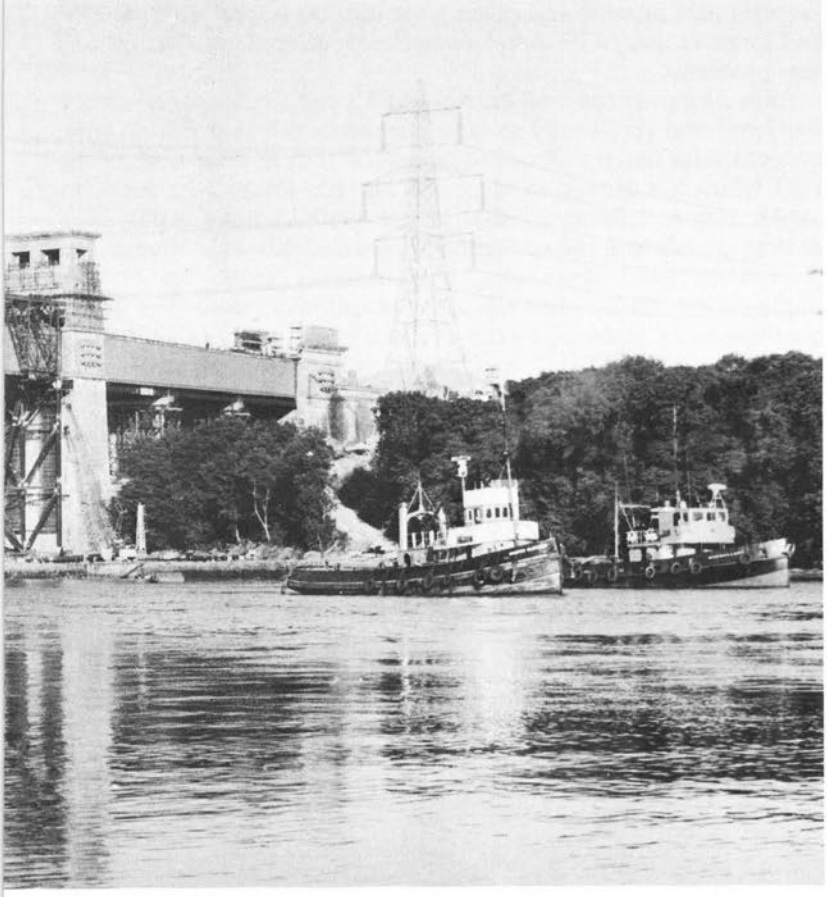
The design for the 'new' bridge had to provide for the support of both tubes while they were being demolished and, at the insistence of the Welsh Office, provide for sufficient strength for the construction of a roadway above the railway (subsequently built). Changed traffic conditions in the Menai Straits (by 1971 mainly



Right:
Work on the reconstruction of the Britannia Bridge proceeded apace during 1970 and 1971 in preparation for its reopening on 30 January 1972. In June 1971, two tugs are seen drifting stern first to collect the pontoons used to carry prefabricated arch girder sections for positioning with the lifting gear on the bridge.
E. N. Kneale

restricted to small coastal steamers), meant that clearance above water level could be reduced to about 90ft, and new steel spandrel-braced arches (prefabricated at nearby Port Dinorwic) were constructed beneath the old tubes by the cantilever method to produce a pleasing structure from which rail passengers, for the first time, could admire the Straits below. By a strange irony, the 'new' bridge may resemble Stephenson's original design for a cast-iron arch bridge which had been vetoed by the Admiralty so long ago.

After the reopening of the bridge, the Caernarvon branch and temporary Freightliner terminal closed again, as did the station at Llanfair PG, although this station has since opened for the third time.



Left:
Closed again from 30 January 1972! *British Rail*

The HST and APT

In the same year as SNCF unveiled its prototype 187mph articulated TGV high speed train intended for use on the proposed Paris-Lyons line, BR produced the prototypes of its High Speed (HST) and Advanced Passenger (APT) trains.

Surprisingly in view of later developments, the first to run on BR metals was the APT, when the prototype gas turbine-powered four-car APT-E made a slow moving test run at Derby on 25 July. It was announced that it was hoped subsequently to build two prototypes, a gas turbine and an electric unit 'with the expectation of getting them into passenger service for evaluation by 1975'. Thereafter, as reported by the *Railway Magazine*, it was anticipated that 'the takeover of BR Inter-City services by production of APTs should be rapid'. Maximum speeds of 150mph were planned using existing tracks (in contrast to the French proposals for a new line) assisted by tilting suspension and axle-guidance systems permitting existing track curves to be taken safely up to 50% faster and with no more lateral force felt by passengers than in conventional rolling stock. Significantly, in view of the subsequent history of the project, *Modern Railways* in September 1972 was sceptical and indicated that 'some of the proprietorial interest and pride must also be tinged with anxiety' and foresaw that 'APT breaks much new ground and faces many new problems'.

As is now only too well known, APT's use in passenger service was brief and (politically at least) unsuccessful, and BR must be ever thankful that it authorised the concurrent development of the HST which has proved so successful and has formed the mainstay of BR non-electrified services in the 1980s. Unlike APT, HST developed existing railway technology and, although intended to be run as fixed train sets, was basically made up of two single-ended Bo-Bo diesel-electric locomotives powering Mk 3 coaching stock intended to run at a maximum speed of 125mph in normal traffic. The Mk 3 coach, with only detail differences, was designed for use not only as part of HST sets but also in normal loco-hauled traffic, and the first loco-hauled Mk 3 coaches were introduced on 22 November 1972 on a King's Cross-Edinburgh service.

Below:
APT-E on the BR test track at Old Dalby, on 21 February 1974. *J. H. Cooper-Smith*

Right:
Plans for the APT had been shown to the public at an exhibition, 'The Next Train', held at the Design Centre in 1969. At its opening on 15 July, the proposed interior of APT was inspected by the Chairman of the BRB, Sir Henry Johnson CBE, and Minister of Transport the Rt Hon Richard Marsh MP, who was to succeed Sir Henry as Chairman of the Board in September 1971. *British Rail*

The HST power cars incorporated lightweight frame-mounted traction motors and Paxman Valenta engines of 2,250bhp, and had aerodynamically-shaped cabs incorporating a wide flat windscreen with no side windows. The Mk 3 coaches were longer than previous BR stock at 75ft 5in, being of all-welded fully-stretched steel body structure with all underframe-mounted equipment enclosed within parallel framing to give a smooth aerodynamic line. Both the first and second class coaches utilised a standard body shell with a result that certain passengers in second class seats enjoyed views not of the passing countryside but of thick window pillars, a design feature sadly perpetuated in subsequent suburban stock. Automatic sliding doors (activated by floor mats) between passenger saloons and end vestibules were an innovation intended to ease the lot of luggage-carrying passengers.

The prototype HST was introduced in a reversed standard livery of grey and blue similar to the contemporary Pullman livery, but production units were subsequently painted in standard livery. The prototype HST and APT were 'blacked' by members of the train drivers' union ASLEF at an early stage in testing and inspired a one-day strike, but the ban was lifted early in 1973.

Left:
The interior of the experimental HST second class saloon was claimed to have been designed 'to set new standards of passenger comfort', and certainly the planned maximum speed of 125mph promised much faster travel times wherever the new trains were introduced.
British Rail

Below:
After industrial relations problems had been overcome, the prototype HST was tested extensively on the Western and Eastern regions: on 31 July 1973 it was photographed at Finsbury Park on an up test run.
M. Hall

End of a Pullman Era

As BR passengers were invited to marvel at and look forward to the high speed future of the HST and the APT, passengers on the Brighton line of the Southern Region, who even today still await HST speed and comfort, mourned the passing of their prestige train, the 'Brighton Belle'. Its withdrawal marked the end of a way of life on the Brighton line that went back over 90 years — Pullmans had first been introduced by the LBSCR in 1875 — and the end of the first (and only) Pullman EMU in the world.

Since their introduction in 1933, the three 5PUL five-car all-Pullman sets had worked between Brighton and London three or four times a day (except during World War 2) and provided Pullman comfort and trappings to a loyal band of travellers who had fought hard and successfully (under the leadership of Lord Olivier) only a few years earlier for the retention of kippers on the train's menu. The units in later years may have ridden roughly in comparison with the more modern 4CIG units, but their passing was greatly mourned when, at 18.50 on 30 April 1972, the last farewell special left Brighton to the strains of 'Auld Lang Syne' played by the Haywards Heath Town Band. At Victoria the final down train formed of units Nos 3051 and 3052 left at 23.00 as a champagne special serenaded by the Croydon Town Band. Tickets, including champagne and a three-course meal served in wicker baskets, cost £10.

After April, loco-hauled traditional Pullmans continued to form part of the 'Golden Arrow' boat train, but not for long. Also doomed to be replaced by multiple-unit trains, the last 'Golden Arrow' Pullman service ran on 30 September 1972 hauled by

Below:
Making up in elegance what it lacked in speed and quality of ride, the 'Brighton Belle' was sadly missed after its withdrawal in 1972. Although the final blue and grey livery in which unit No 3052 was photographed at Victoria in January 1972 lacked the earlier Pullman dignity, the interior — refurbished in 1968/69 — remained solidly attractive to the end.
British Rail/J. H. Cooper-Smith

Class 71 No E5013 recalling the train's former glory by carrying the traditional arrow emblem, headboard and flags. The 'Golden Arrow' Pullmans included the first class Pullman cars Nos S301S and S302S, formerly *Persius* and *Phoenix*, which like *Audrey* from the 'Brighton Belle' have since been lovingly restored, and now resplendently feature in the English portion of the 'Orient Express'.

With the passing of the 'Brighton Belle' and the 'Golden Arrow', Pullmans survived in ever-decreasing numbers to provide first class facilities on Eastern Region until 1978, and only the 1966-built 'Manchester Pullman' stock survived into the mid-1980s to see the return of Pullman elegance, both in restored form in the VSOE and SLOA experiments, and in the allocation of Pullman status to a limited number of prestige InterCity workings.

Above and left:
Locomotive-hauled Pullman cars formed the rear portion of the down 'Golden Arrow' when photographed leaving Sevenoaks Tunnel on 4 May 1968. After the withdrawal of this service, on 30 September 1972, there was no longer any need for the special platform gate at Victoria through which had passed so many celebrities before the age of the plane.
J. H. Cooper-Smith/British Rail

Station Developments

1972 was marked by major station developments, both positive and negative. Of paramount importance, in view not only of its own development as a major traffic source but also because it demonstrated new thinking in traffic policy, was the opening on 26 April of Bristol Parkway. Situated adjacent to the Almondsbury interchange of the M4 and M5 motorways at Stoke Gifford, near the junction between and serving both the Paddington-Cardiff and Birmingham-Bristol main lines, the new 'park and ride' station was formally opened by the Chairman of the British Railways Board, Richard Marsh. It was hoped that its convenient location and generous car-parking facilities would attract motorists from Bristol and the lower Severn Valley to travel thence by train, no doubt particularly to London.

The new station was planned on a strict budget of £200,000, including £45,000 for road improvements which were a condition of planning consent, and initially allowed for limited passenger facilities — a prefabricated waiting shelter linked by a footbridge to two single-sided platforms enjoying only 'bus stop'-type shelters. Such was the instant success of Parkway, however, that within a year the decision had been made to provide platform canopies and a covered footbridge, and in 1985 the Western Region even announced the possibility of increasing platform capacity to improve interchange facilities.

Another 'new' station was opened on 1 August, when the Lord Mayor of Oxford formally opened the city's rebuilt station. The

Right:
The limited passenger facilities at the new Bristol Parkway were improved by providing platform canopies and a covered footbridge.
British Rail

old dilapidated timber buildings had long been a source of complaints to the *Times* and elsewhere, but refusal of the local authority to sanction commercial development inhibited redevelopment plans until unacceptably high maintenance costs justified a simple, relatively cheap (£250,000) but pleasing design.

Greater co-operation from the local authority was evident at Huddersfield, where one of the finest examples of Victorian railway architecture in Britain was magnificently restored at the end of 1971 and the beginning of 1972 as the result of co-operation between British Railways and Huddersfield Corporation. The grime of ages was removed from the Corinthian façade and centre portico of this architectural masterpiece completed in 1850, and ugly later additions were removed. The building was sold to the Corporation and leased back to British Railways to preserve for posterity a feature of the townscape to the mutual advantage of both parties. In contrast with the destruction of the Doric Arch at Euston, this partnership indicated a new attitude towards the restoration and use of buildings of character that boded well for the future.

Restoration of Huddersfield was justified by its continuing use as a major passenger station, but no such justification could save the ex-GWR 'Cathedral' at Birmingham Snow Hill, which finally closed in March 1972. Main line traffic had ceased in 1967, on completion of the London Midland Region electrification scheme to Birmingham New Street, and only a single railcar service to Wolverhampton (Low Level) survived until final closure, after which the demolition contractors moved in and razed all buildings to the ground. Fifteen years later, work has been completed to reopen the Snow Hill tunnels and to restore a rail service to a new but smaller station designed within an office development on the site.

Right and Centre right:
Contrasts at Oxford. The disintegrating wooden station facilities at Oxford that regularly attracted comment from leading academics at the University, and featured in letters to the *Times*, were replaced in 1971 by simple modern facilities. A Class 47-hauled train approaches the up platform (No 1) on 1 August 1972 as a suburban service from Paddington terminates in Platform 2. *British Rail*

Below:
Neither Bristol Parkway nor Oxford is likely to attract listed building status, although even as recently as 1986 British Rail and Huddersfield Corporation were having problems finding suitable uses for the Grade 1 listed building at Huddersfield.
West Yorkshire PTE

1973

In 1973 British Rail scored some notable achievements in spite of the prevailing economic situation.

Rt Hon Richard Marsh

Right:
The entrance to the new Southport station was incorporated in a retail development on the site of part of the old station. *Ian Allan Library*

Right:
The complicated trackwork and reverse curves that required the imposition of a 20mph speed limit are only too obvious in this view of 'Deltic' Class 55 No 9020 *Nimbus* leaving Peterborough at the head of the 14.00 King's Cross-Edinburgh service on 30 July 1970. Realignment and rebuilding was completed in 1973. *J. H. Cooper-Smith*

New Stations

Following hard on the instant success of Bristol Parkway, a second 'park and ride' station was opened on 7 May 1973 at Alfreton & Mansfield Parkway by Chairman Richard Marsh. The new station's opening was celebrated by the departure of no less than five complete excursion trains, including an all first class service to London at a bargain price of £1 return which was flagged away by the Chairman. Situated on the London (St Pancras)-Sheffield (Erewash Valley) main line, the new station was situated close to an M1 interchange, and initially was provided with a car park for 250 cars as well as a 15min bus link from the nearby towns of Mansfield, Sutton-in-Ashfield and Kirkby-in-Ashfield which together had a population of over 250,000. Most significantly, of the total cost of £92,000, £35,000 was provided by the Alfreton UDC, believed to be the first time that BR had received financial assistance from a local authority towards the cost of a main line station.

Like Bristol Parkway, the new station at Alfreton was of simple construction, consisting of a small one-storey building on the down platform opening on to the road approach. There was a footbridge link to the up platform on which protection was provided only by a bus stop-type clasp shelter. Both platforms could accommodate 10 coaches, and initially the station was served by eight daily services to St Pancras and enjoyed through services to Glasgow, Leeds, Sheffield, Nottingham and Leicester.

1973 saw the opening of other 'new' stations, albeit reconstructed existing structures. Again improving facilities on the ex-Midland Railway, a new station building was opened by the Mayor only a week later (on 15 May) at St Albans: two months earlier, on 15 March, a combined new station and shopping centre was opened at Southport (formerly Southport Chapel Street) incorporating 15 shops, a supermarket, a new department store and, on the former site of platforms 7-11, a new car park for 400 cars.

Striking and much-needed improvements to passenger amenities at King's Cross were brought about with the opening of a new concourse building in June. King's Cross station, despite its simple and clean modern-looking lines, had been designed by Lewis Cubitt as long before as 1852 and remains a Grade 1 listed building, although its façade had long been disfigured by ugly

Right:
One of Richard Marsh's pleasant early tasks as BR Chairman was to officiate at the opening of Alfreton & Mansfield Parkway. He is seen here flagging away an inaugural special hauled by a Class 45 locomotive.
British Rail

Left and below:
The uncluttered (and many consider un-Victorian) façade of King's Cross was improved dramatically by the clean and simple lines of the 1973 alterations and the removal of ugly and untidy additions on the forecourt enabled the façade to be better enjoyed. Inside, the new concourse, ticket office and departure indicator improved the quality of service to passengers on the East Coast main line.
British Rail

temporary additions. The new single-storey concourse building, opened by Richard Marsh on 25 June and constructed at a cost of £640,000, successfully complemented the recently cleaned yellow-brick façade of the terminus to provide urgently-needed improved ticketing and shopping facilities, an air-conditioned travel centre and an enlarged passenger circulation area. The site, limited in size and constrained by the listed façade and the location of numerous railway tunnels, passages and shafts, was not easy to redevelop, and at peak times the concourse remains one of the most congested of all London termini.

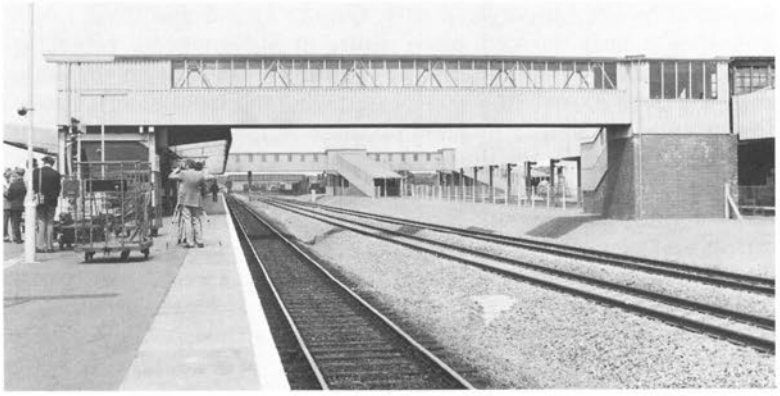
Meanwhile, on the West Coast main line, and redeveloped at a cost of £250,000 in time for an extension of the Glasgow electrification scheme, Wigan North Western station was reopened by the Mayor on 4 July. On the East Coast main line a new station near the new town centre at Stevenage — replacing the old station one mile to the north — opened on 16 July, enjoying over 20 non-stop services a day to and from King's Cross. Down trains in the morning and up trains in the evenings were also scheduled to stop at the new station which BR confidently expected to develop as a railhead for business travellers in Hertfordshire, Essex and Bedfordshire, particularly as the new station was situated not far from the A1 (M) — almost a Stevenage Parkway! Elsewhere, on 7 May, smaller stations were reopened at Alness (north of Dingwall), which had been closed in 1960, and, significant for its name if nothing else, Llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogoch for the second time (having been closed in 1966 and again in 1972).

Line Improvements and Increased Speeds

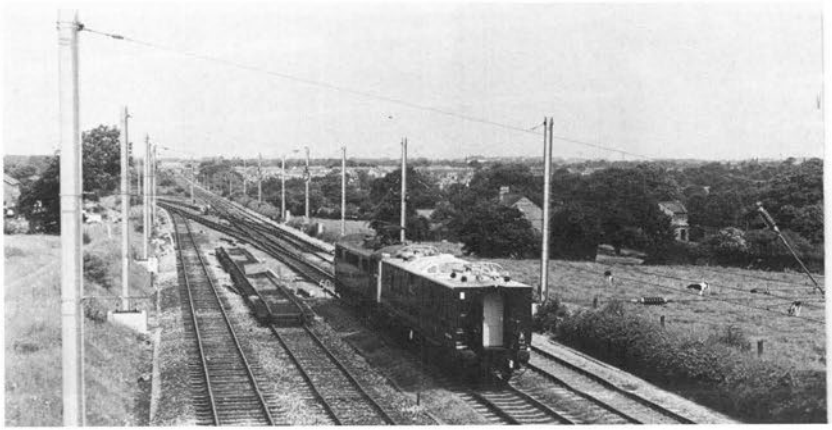
The lot of travellers from King's Cross and Wigan was improved in 1973 not only by new station buildings but also by improved journey times introduced at the beginning of the summer timetable on 7 May.

On the Eastern Region, acceleration of main line services was made possible by the completion of Stage 2 of the line speed improvements programme permitting 100mph running over almost 80% of the route between King's Cross and Newcastle. The highlight of Stage 2 was at Peterborough, where track realignment and station signalling improvements at a cost of £2½ million enabled the long-standing limit of 20mph through reverse curves at the station to be raised to 100mph! The track layout in the Peterborough area, controlled by a new signalbox covering a 30-mile section of the East Coast main line, was greatly simplified and separate fast tracks for non-stop trains were provided through the station. Plans for rebuilding the station had existed since the 1930s, but it was not until 1972 that a new island platform was brought into use and the scheme was not fully completed until just before the introduction of the 1973 timetable.

The Peterborough changes made it possible for overall times on non-stop services to be substantially improved, by up to 13min in



Right:
By 1973, new platforms (left) and straight- through tracks had revolutionised the picture at Peterborough and permitted 100mph running through the station.
Ian Allan Library



Right:
In preparation for the energising of the section of electrification between Crewe and Preston, a test coach is hauled past Euxton Junction (between Wigan and Preston) by Class 86 No E3183 on 4 July 1973. *D. A. Flitcroft*

the case of the 'Flying Scotsman' for which the journey time to Edinburgh was reduced to a 'fastest ever' 5½hr at an average speed of 71.45mph. The timing of 116min for the 160½ miles between Stevenage and York by the 07.45 King's Cross-Newcastle produced a new record start-to-stop average of 83mph, and Leeds services were accelerated by up to 7min.

On the London Midland Region, July 1973 saw the opening of the first stage of the Weaver Junction-Glasgow electrification scheme when on the 23rd the 33 miles from Weaver Junction to Preston were 'brought under the wires'. Journey times had, inevitably, suffered as electrification work had been carried out, and the London Midland Region was keen to improve journey times even before the completion of the whole scheme in 1974. Changing locomotives from diesel to electric and vice versa at Preston, where many trains were delayed in any event by the need to attach or detach portions for Blackpool, Barrow and Carlisle, rather than at Crewe, enabled the down 'Royal Scot' to be accelerated by 38min, and permitted the restoration of a 6hr timing (as enjoyed in 1970) for the up working. Associated with the electrification work were signalling improvements, illustrated by the opening early in 1973 of new powerboxes at Preston and Carlisle to complete modern signalling on the West Coast main line throughout from Weaver Junction to the Scottish Border.

In contrast, on the Western Region, a once-important main line, that between Paddington and Birmingham via High Wycombe, was relegated to secondary status in May 1973 when all remaining express services save for one commuter service in each direction were diverted via Reading and Oxford.

Below:
Electrification in action. On 7 February 1975, the 15.00 Preston-Crewe was formed of Class 304 unit No 013, photographed approaching Warrington. *D. A. Flitcroft*

Left:
Meanwhile, to the north of Preston, electrification work continued, as at Shap Summit where a Class 50-hauled up express is seen overtaking a concrete-mixing unit hauled by Class 25 No 5284.
British Rail

End of the Blue Pullmans

If 1972 saw the demise of the traditional locomotive-hauled wooden-bodied Pullman car, 1973 marked the final chapter in the life of the 'Blue Pullmans', the first fully air conditioned, high speed, high quality multiple-units which had in many ways blazed the trail for the HST, the prototype of which carried its first passengers (albeit invited and non-fare paying) in August 1973. The 'Blue Pullmans' had carried their last fare-paying passengers on scheduled services only three months before, on Friday 4 May, and carried excursionists on a commemorative tour the following day.

Two six-car all-first class sets had been introduced as the 'Midland Pullman' on services from St Pancras and Manchester Central in July 1960, and three eight-car trains (including second class cars) had commenced work on the Western Region as the 'Bristol Pullman' and 'Birmingham Pullman' respectively on

Below:
A 'Blue Pullman' in its original livery awaits departure from Platform 5 at Paddington.
G. P. Cooper

12 September 1960. These were joined by the 'South Wales Pullman' utilising a set previously kept in reserve, on 11 September 1961.

The 'Birmingham Pullman' and 'Midland Pullman' had been withdrawn upon the introduction of full electric services out of Euston in 1967 and thereafter all the units were utilised by the Western Region (after alterations to permit the units to work in multiple) on services to Bristol and South Wales and, for a limited period only, to Oxford. The riding of the 'Blue Pullmans' may have left something to be desired, but the concept of high speed, air conditioned comfort which they introduced led the way to the HST fleets which so dominate modern non-electrified main lines, but which are without the Pullman supplement.

Services previously operated by the Pullmans were, after May 1973, served by air conditioned Mk 2 locomotive-hauled trains fitted with electric train heating (ETH) pending the introduction of the full HST fleet. The gradual spread of air conditioned stock led to the replacement of Class 52 'Western' diesel-hydraulics on such services by Class 47 diesel-electric locomotives since the former were not equipped to provide ETH, and the Class 52s were more frequently relegated to West of England services, and later to goods traffic.

Left:
Six months after the withdrawal of the 'Blue Pullmans', services on the Western Region were provided by Class 47-hauled electrically heated and air conditioned Mk 2d coaches, as seen on 25 September 1973 when Class 47 No 1697 hauled the 12.45 Paddington-Bristol out of the castellated portals of Twerton Tunnel near Bath.
J. H. Cooper-Smith

HST and APT Developments and Problems

Development trials of the HST and APT were delayed at the end of 1972 and during 1973 by industrial disputes. Initially, the Associated Society of Locomotive Engineers & Firemen (ASLEF) 'blacked' the APT, an action described as 'worse than folly' in a *Modern Railways* editorial and as a 'tragedy' by the *Railway Magazine*. A one-day strike had been called on 23 November 1972 after the APT had been moved by inspectors from a siding into Derby Works and in early 1973 a policy of non-co-operation was resumed, culminating in a further one-day strike on 28 February. The industrial action had included a ban on rest day and overtime working, and working to rule, an example of which was a refusal to drive trains not fitted with speedometers. This resulted in the almost total disappearance of Southern Region 4SUB and 4EPB stock from all inner-suburban services in the early part of March. Although nominally linked to the introduction of proposed high speed trains, the dispute had more to do with attempts to revise the existing wage structure, and the blacking of APT eventually stopped immediately before Christmas 1972 and trials commenced in the New Year. The industrial action was finally called off on 17 March, although further action took place on the Southern and Eastern Regions later in the year, in November and December.

APT did not commence trials in the Derby area until August, but the prototype HST began trials in January from Derby and

Below:
The prototype HST, with power car No 41002 leading, passes Holgate Bridge, York, on 6 July 1973 after setting up a record speed of 131mph on a test run from Darlington.
Norman E. Preedy

went to the East Coast main line in February. A speed ban imposed by ASLEF was lifted 'with regret' at the ASLEF Conference held in York in May, and on 6 June the HST broke the British railway speed record (set by A4 Pacific No 4468 *Mallard* in 1938 with a speed of 126mph) reaching 131mph between Northallerton and Thirsk. Five days later, in the same area, the record was raised to 140mph, and on 12 June to 143mph.

On 2 August, journalists and other guests were invited to experience the pleasure of travel in the new train on a demonstration trip between London and Darlington. Railway journalists were ecstatic about the comfort, smoothness and quietness of the coaches, and O. S. Nock reported that at 128½mph 'the travelling was so smooth and quiet that one almost lost the sensation of speed'.

By the time of the first trip, two prototype catering vehicles, Nos E10000 and E10100, had been delivered and included in the formation, a RUK (restaurant unclassified kitchen) and a RSB (restaurant second buffet) designed to provide fully-cooked multi-course meals and self-service hot snacks respectively. A proposal to supplement refreshment facilities by the use of a trolley service has only been partially realised.

It had been intended to introduce the HST into normal passenger service between Leeds and Edinburgh on 13 August, but once again problems with ASLEF caused delay and it did not eventually enter service until 1975, and then on the Western Region. It was for the Paddington-Bristol/South Wales routes that government authority for the construction of 54 HST power cars with associated vehicles was given in the autumn of 1973.

APT-E commenced technical trials on BR's Old Dalby test track in October and within six weeks had achieved a maximum speed of 125mph at a cant deficiency of 8% on track otherwise limited to 80/90mph.

Below:
As a result of the industrial disputes that deferred the introduction of the prototype HST into passenger service on the Eastern Region in August 1973, the prototype unit later went to the Western Region for trials and crew training, such as when power car No 43001 (previously 41001) was photographed hauling Test Car No 6, Mk 2 FK and production Mk 3 coaches at Swindon on 24 June 1976. *Brian Morrison*

Class 87 – Britain's First 5,000hp Locomotive

When government authority was given in 1970 for electrification between Weaver Junction and Glasgow, with a scheduled completion date of May 1974, it was considered impracticable to design a completely new locomotive in the time available and, in any event, a new type would have to be compatible with existing Class 86 locomotives.

The new Class 87 locomotive therefore, closely resembled its Class 86 predecessor, although with a view to reducing track wear a completely redesigned bogie was evolved using Flexicoil suspension and frame-mounted traction motors. The Class 87 was also the first production build to include a BR-designed driver's vigilance system comprising a two-position foot pedal which had to be kept depressed, and reset at intervals by a pedal or a switch. Externally, the new locomotives closely resembled their predecessors, having been designed around the Class 86 body-shell, although they can easily be distinguished because they have only two windscreen glasses at each end.

Thirty-five locomotives were ordered for the Glasgow electrification scheme with a 36th planned for trials with a thyristor control system, No 87101. The locomotives were introduced with a maximum speed of 100mph, but are now cleared for 110mph. Originally delivered unnamed, names have subsequently been allocated to locomotives in the class and the prototype (87001) is now named *Royal Scot*.

Below:
Locomotive No 87008 (now named *City of Liverpool)* heads the 16.45 Euston-Glasgow past Springs Branch, Wigan, on 27 May 1974.
T. E. Sutch

1974

As the economic storm-clouds gathered so each of the businesses of the British Railways Board felt in 1974 the impact of the nation's problems. The year has been a difficult one and 1975 will be no easier.

Rt Hon Richard Marsh

Below:
Prior to the introduction of the 'Electric Scots', Class 86 No 86213 (now named *Lancashire Witch*) was seen hauling a test train near Carluke station north of Carstairs. Before the policy of headcode displays was abandoned, the code 1Z80 carried by the locomotive described its express (Class 1) and special (Z) classification. *British Rail*

Below right:
Class 423 (4VEP), Class 415 (4EPB), Class 418 (2SAP) and Class 405 (4SUB) units receive attention in the new depot at East Wimbledon. Note the bright lighting and clean inspection pits — a marked contrast with most older depots. *British Rail*

The Electric Scots

In his monthly column in the *Railway Magazine* in May 1974, O. S. Nock commented that 'in future years May 1974 can well become regarded as one of the greatest milestones in the long history of British passenger train services', and described the completion of the West Coast main line electrification to Glasgow not only as a major engineering achievement but as 'an event that consummates the positive revolution in journey times and individual train speeds that has been in progress over the last 20 years'. There can be no greater contrast between this optimism and the pessimism expressed about the future of Scottish services in the Beeching Report, which contemplated that 'the erosion of daytime rail traffic between London and Scotland would probably continue to the point where some trains would have to be withdrawn'.

Although the last section of 85 miles between Garstang and Carlisle Kingmoor had been energised on 18 February 1974, and four trains a day had been diagrammed for electric haulage north of Preston since 22 April, it was not until the beginning of the new timetable on 6 May that the new electric service officially commenced, when the timing for the 401 miles between London and Glasgow was reduced from almost 6hr to 5hr 5min on six out of eight daily trains. Their average speed of 77.92mph was considered at the time to be an achievement unparalleled in Europe for a service of such frequency and distance. The seventh train, the 'Royal Scot', was allowed only 5hr exactly for the

Right and Below:
The Royal seal of approval is bestowed on the West Coast main line electrification scheme as HM The Queen is presented to Pirelli Construction executives at Carlisle on Tuesday, 7 May 1974, after travelling in the Royal Train from Preston where it was photographed being hauled through Oxenholme by Class 87 No 87018.
Pirelli/John A. Phillips

journey, including a stop at Preston, at an average speed of more than 80mph. All the new services should have been formed of air conditioned stock, but delays caused by the 'three-day week' earlier in the year resulted in only three sets being available for the start of the service.

Before the new timetable, only five through services a day had been provided. An innovation made possible by the higher speeds was the introduction of a daytime service from London to Inverness (574 miles) — 'the Clansman' — which after departure from Euston at 09.35 was routed via Birmingham to allow connections from the Midlands, whose services to Edinburgh and Glasgow were expanded from only one to four services per day in each direction and accelerated by an hour.

The new electric service received almost instant Royal recognition as HM The Queen and HRH Prince Philip made a visit to the line on 7 May, inspected the powerbox at Preston and then travelled to Glasgow in the Royal Train hauled by Class 87 No 87018. The Royal Train included the test vehicle *Mentor*, two Mk 3 coaches, Royal Saloon No 45000 and an inspection saloon and, between Lancaster and Oxenholme, the Queen travelled in the locomotive cab.

Less distinguished visitors were attracted to the delights of electrification by special promotional fares of only £5 return by specified trains between Glasgow and London.

On completion of the West Coast main line electrification, the Class 50 diesel-electric locomotives were transferred to the Western Region for express passenger traffic pending the introduction of HST services.

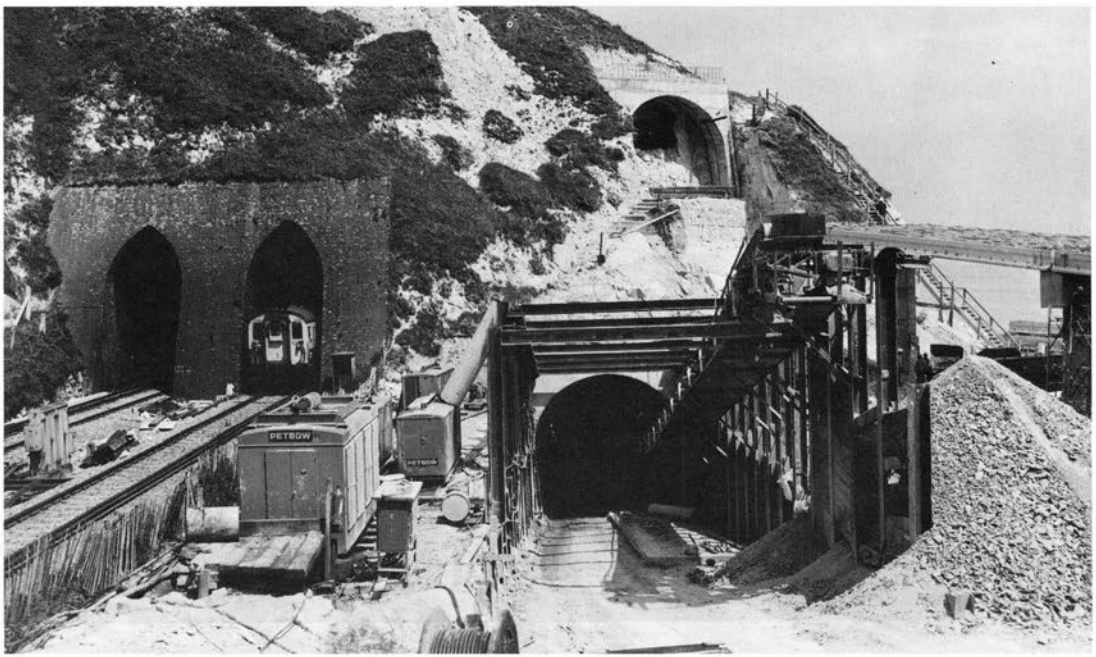
Below:
An 'Electric Scot' in service. Hauled by Class 86 No 86245 and made up of Mk 2d air conditioned stock, the 13.45 Euston-Glasgow sweeps through the Lune Valley near Tebay alongside the newly constructed M6 motorway on 23 May 1975.
Peter J. Robinson

Channel Tunnel – Hope and Disappointment

Following the approval by parliament of the 'Channel Tunnel' White Paper in the autumn of 1973 (Cmnd 5430) and the subsequent signing of an Anglo-French Treaty, BR published a consultation document in February 1975 entitled 'Channel Tunnel: London-Tunnel New Rail Link'.

Indications of the route and other characteristics of a proposed 25kV electrified high speed line between London and the tunnel entrance near Folkestone had appeared in the technical press in 1972, and the purpose of the Board's new lavishly-illustrated booklet was to inform the public of details of and intended alterations to earlier proposals, and to invite comments on possible environmental consequences. The White Paper, published by Edward Heath's Conservative administration before its defeat in the February 1974 General Election, had accepted that the full potential of the 'Chunnel' could only be realised with the simultaneous development of high speed rail links. The BRB planned to promote a Private Bill authorising its construction in 1974/75 in the hope of obtaining Royal Assent in July 1975, the same time as it was expected that the two governments would enter into Phase 3 of the Channel Tunnel project, the actual construction of the tunnel itself. Completion of tunnel and new railway was planned for 1980!

After discounting three schemes proposed by consulting engineers in 1970 on environmental grounds, BR decided to



Below:
Activity at Folkestone in 1974, where three tunnel entrances can be seen, gave no clue to the impending cancellation of the Channel Tunnel project. On the left, a Class 411 (4CEP) unit passes the entrance (centre) to a contractors' tunnel being driven towards the lower site from which work on the Channel Tunnel itself would commence, whilst (upper right) a new road tunnel giving site access is under construction.
Paul Mellor

develop a new route closely following the existing lines through open country from Ashford to Edenbridge, and between Woldingham and South Croydon, and involving the construction of entirely new lines only between South Croydon and Balham, of which six miles were to be in tunnel. A connecting line from Edenbridge to Woldingham (seven miles) and a 12-mile bypass south of Ashford were also included. A diagram of the proposed new line was set out in the consultation paper and comments were invited before the end of March.

On 1 July the new Secretary of State for the Environment, Anthony Crosland, announced that a decision on the route of any rail link would be deferred until the end of the year, and more time was thereby given to the vociferous objectors whose comments were described in *Modern Railways* as 'on the whole ill-informed and louder than against road plans that hurt the environment more'. Vested and orchestrated opposition from the road lobby and anti-EEC campaigners was suspected and ultimately proved successful when, on 26 November, Mr Crosland announced that the government could not approve or finance the high-speed rail link, the estimated cost of which had risen from £120 million in February 1973 to £373 million in May 1974, exclusive of environmental and compensatory payments. Even though the Minister then expressed the hope that BR would be able to find an acceptable low-cost alternative, only two months were to pass before the same Minister announced, on 20 January 1975, the total abandonment of the 'Chunnel' project.

Another 10 years were to pass before the British and French governments, led by Prime Minister Thatcher and President Mitterand respectively, again signed a treaty for the construction of a rail tunnel beneath the English Channel. It can only be hoped that, on this occasion, its construction will be completed, and that by the early 1990s it will be possible to board a train at London Waterloo to travel in speed and comfort to Paris, Brussels and other parts of Europe.

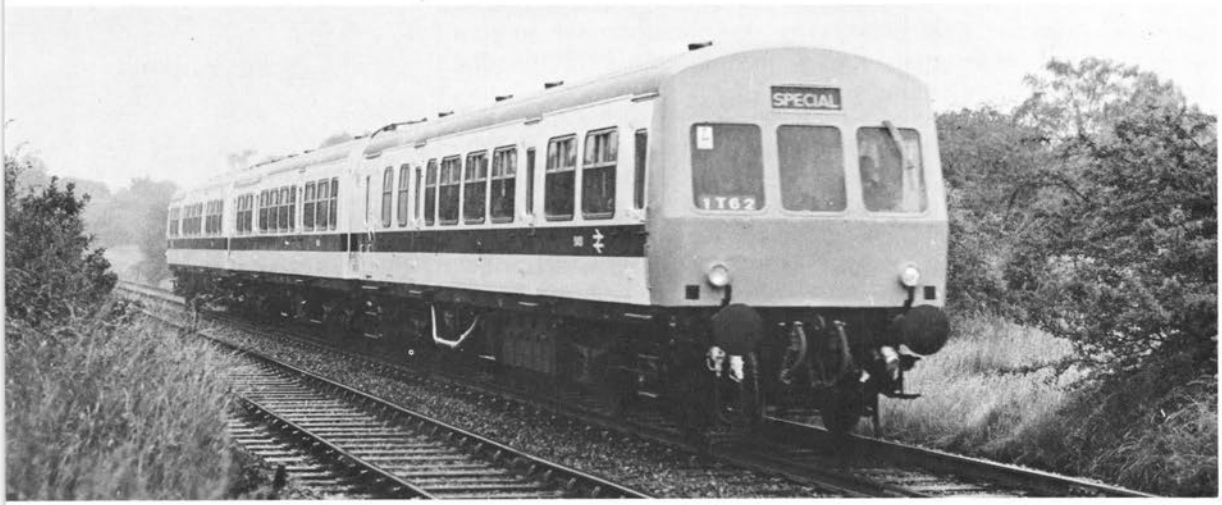
Left:
Paved concrete track was planned for use in the Channel Tunnel. An experimental 60m curved section of PACT — paved concrete track — is traversed by a two-car DMU heading for Nottingham at Radcliffe-on-Trent.
British Rail

Facelift for Locals

The introduction of modern Mk 2 and Mk 3 air conditioned Inter-City rolling stock had accentuated the gulf between BR's best and worst vehicles. The standards of comfort enjoyed by passengers on connecting services provided by diesel multiple-units had declined markedly over the years, and in 1974 the multiple-unit fleet comprised 3,438 vehicles, the oldest of which had been delivered in 1956 and the newest of which was over 10 years old.

Although this number of vehicles was to be reduced by electrification schemes, it was calculated that about 1,800 vehicles would be in use until the early 1980s, when a new fleet of units was expected to enter service, and in 1974 BR announced plans for refurbishment of diesel multiple-units with an anticipated further life span of 10 years or more.

A 1959-built three-car Metro-Cammell Class 101 unit comprising vehicles SC51451, SC59545 and SC51518 was refurbished in 1974 at Doncaster Works in two different styles, 'low cost' and 'medium cost', and demonstrated on all regions. The unit was also



Above:
An official view (apparently taken in very inclement weather) of the prototype refurbished DMU. *British Rail*

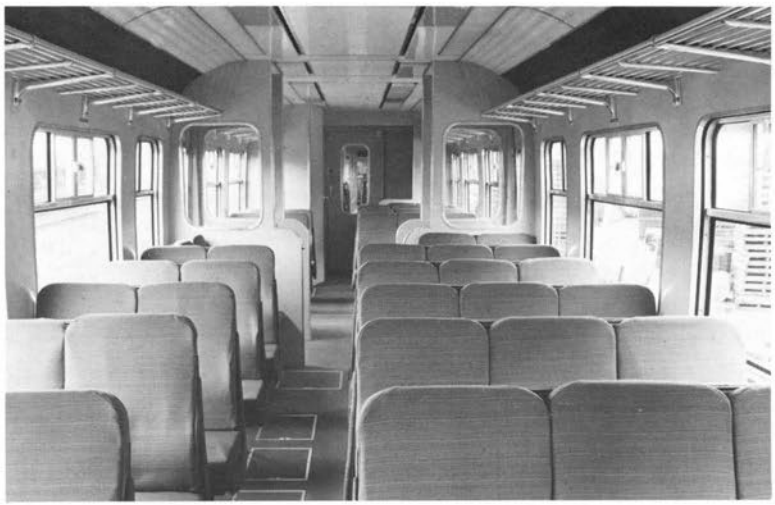
Right:
Adjustable Inter-City style seating in the redesigned first class compartment. This photograph illustrates the 'high cost' version.
British Rail

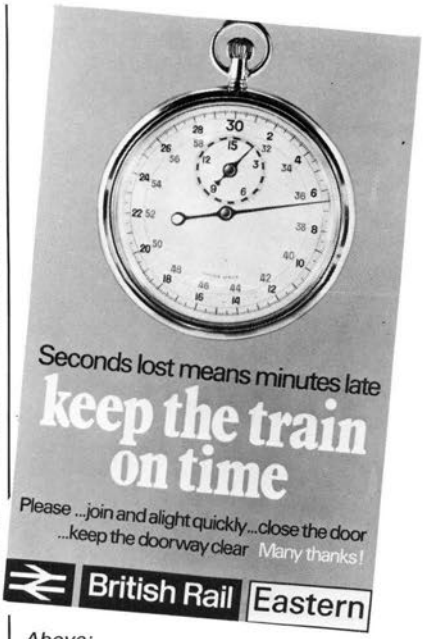
displayed to Passenger Transport Authorities who, it was hoped, would contribute towards the refurbishment of paytrains in their areas.

Externally the unit was painted in a striking, but impractical, white livery enlivened by a broad blue band at waist level. Internally, coach SC51518 was given the 'medium cost' treatment and was fitted with new Inter-City first class 2+1 seats with orange loose covers, lowered ceilings with fluorescent lights throughout, new seats with removable covers in second class, and improved heating and ventilation arrangements. A new Pullman-type gangway was fitted and steps were taken to reduce vibration and noise from the underfloor engine. Refurbishment to this standard was said to cost about £18,000 for each three-car set.

In contrast, the price of the 'low cost' refurbishment given to coach SC51451 would only be £3,000 per set: in this case no new seats were provided or major work undertaken and thus the refurbishment was more superficial in character.

The 1974 plan envisaged that DMU vehicles could be refurbished at a rate of 300 per annum with the programme concluding in 1980. In practice, the white livery proved impossible to keep acceptably clean, and normal blue and grey livery was later adopted as standard.




Seconds lost means minutes late
keep the train on time
Please ...join and alight quickly...close the door
...keep the doorway clear Many thanks!
British Rail Eastern

Above:
This was an attempt to educate the travelling public to assist in the punctual running of trains. Interestingly the obvious solution to the problem, that of fitting automatic doors on main line stock, is one that BR has taken some time to recognise. *British Rail*

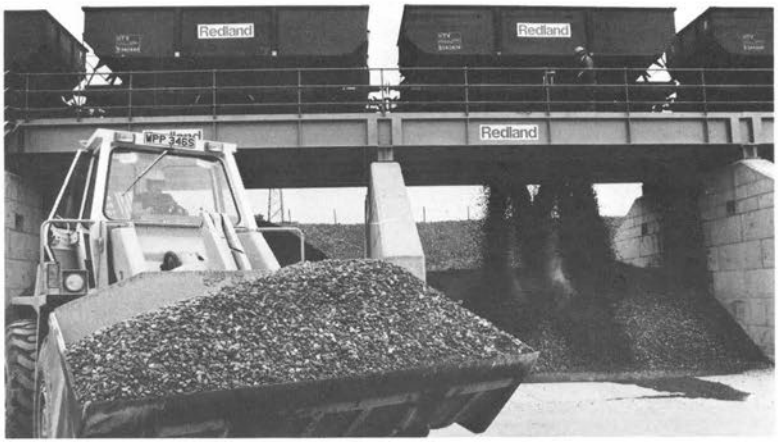
Left:
This photograph shows the full 'high cost' interior treatment for second class saloons. Note the new seating, metal luggage racks, modern wall panelling, and the lower, reprofiled ceiling incorporating fluorescent strip lighting. *British Rail*

Left:
The new white livery for refurbished DMUs was bright and attractive when clean, as shown in this view of a Class 117 Pressed Steel unit passing a restored canal lock at Little Bedwyn. *Les Bertram*

Grants and Reprieves: The Railways Act of 1974

The Railways Bill of 1974, published on 12 June, gave the first clue to the attitude of the new Socialist government (elected in March) towards rail services following its four years in opposition, during which it had attacked Conservative proposals as being altogether too niggardly. Although it did not adopt the previous administration's promise (made in November 1973) to invest £891 million in British Rail over the following five years, the substitution of a block support grant (as required by EEC Regulations) of up to £1,500 million spread over five years for socially necessary passenger services in the place of the administratively cumbersome and economically suspect system of allocating grants to individual lines was welcome. Also welcome was the clause, which eventually became Section 8 in the Act, that enabled grants to be made to firms for installing sidings, rail-access roads and handling equipment:

'Where it appears to the Secretary of State that it would be in the interest of any locality, or of all or some of its inhabitants, for facilities to be provided in that locality or elsewhere for, or in



Right:
Section 8 of the Transport Act 1974 benefited a number of companies. One of these was Redland Aggregates which, following a 50% grant, invested £2.1 million in the construction of a 1½-mile conveyor belt to carry crushed limestone from Buddon Wood in Leicestershire to new sidings at Barrow-on-Soar. The investment also included new discharge sidings at Higham (Suffolk) and also at Harper Lane depot, Radlett, shown here.
Redland Aggregates Ltd

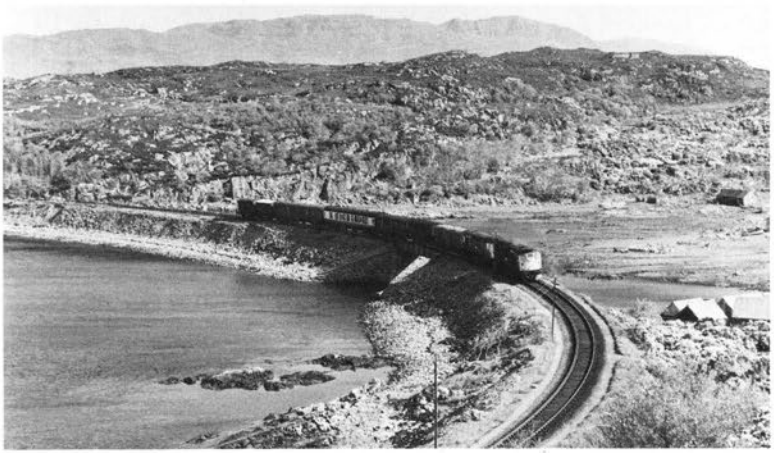
Right:
A suburban line reprieved under Section 3 of the Transport Act of 1974 was the Wimbledon-West Croydon line. Class 416 (2EPB) No 5654 leaves Merton Park on a Wimbledon-West Croydon service on 14 April 1977. The semaphore signalling and wooden crossing gates gave the line a rural charm despite its suburban role. *Kevin Lane*

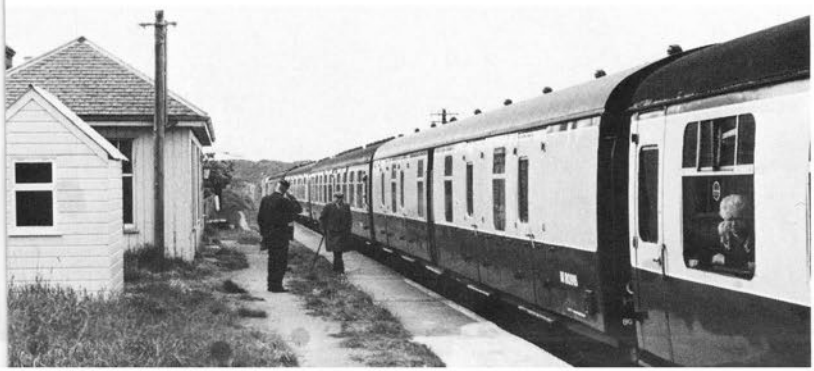
connection with, the loading or unloading of freight, carried and/or intended to be carried by rail, he may, out of money provided by Parliament, make grants subject to and in accordance with this section towards the provision of such facilities.'

Section 8 grants have been a success story and, between the end of 1974 and the end of 1985, £61.6 million of grant aid has been dispersed under the Section 8 scheme on 167 projects. When the guidelines for the administration of the grant were published in February 1975, it was announced that eligible facilities would attract grant at the rate of 50% and that the balance would qualify as capital allowances, thus requiring a company providing rail-handling facilities to find less than 25% of the cost.

Under Clause 3 of the 1974 Railways Act, Minister of Transport Fred Mulley announced on 31 July that six services previously considered for withdrawal were to be retained under the obligation imposed on British Railways in the Act to operate a railway passenger network. These were the Cambrian Coast line, Kyle of Lochalsh-Inverness, Ashford-Hastings, Bedford-Bletchley, Wimbledon-West Croydon and Stockport-Stalybridge. The proposed closure of the Alston-Haltwhistle branch was confirmed however, subject to the completion of a new road link.

A less welcome consequence of the election of the new government, and the high rate of inflation that followed, was a fares increase of 12½% effective from 23 June 1974, to be followed within 12 months by two further increases, by another 12% on 26 January 1975 and by a further 15% on 18 May 1975! These rises were attributed by British Rail to increased costs mainly caused by higher wages.





Left:
The Dingwall-Kyle of Lochalsh line could not be more of a contrast. On the one hand there is the grand but desolate scenery through which Class 26s Nos 5337 and 5332 were photographed passing with the morning mixed service on 19 May 1973, and on the other hand there are the small wayside stations. The solitary passenger at Duirinish station (seen on 4 June 1974) explains the need for a grant if lines such as this are to be retained as a social service.
J. H. Cooper-Smith/G. A. Watt

New Facilities on the Southern

1974 saw improvements on the Southern Region for passengers, signalmen, maintenance staff and goods handlers.

Most obvious to passengers was the completion of the Cannon Street stage of the London Bridge modernisation and resignalling scheme. As an alternative to weekend work which would have been confusing to passengers and spread over six or seven months, Cannon Street terminus was closed completely between 5 August and 6 September to enable the trackwork and signalling to be completely replaced. The peak holiday period was chosen as being the time when the smallest number of commuters were likely to be inconvenienced by diversions, and the complete closure programme was discussed in advance with season ticket representatives. To avoid delays on site, the whole track layout was assembled as a trial run on waste ground at Hither Green before being taken to Cannon Street as a 'custom-made' kit of parts.

On 18 June 1974, the Minister of Transport authorised the rebuilding of London Bridge station itself and approved a 50% grant towards the cost of reconstructing the passenger facilities. The remodelling of the trackwork at, and approaching, London Bridge was completed in 1975, when the new London Bridge signalbox was commissioned, eventually to control 148 track miles (47 route miles) of the most heavily-used railway in the world. The rebuilt London Bridge station was opened on 15 December 1978 by the Bishop of Southwark, 142 years and a day after the official opening of the first London Bridge station in 1836.

Far left and left:
The new track layout for Cannon Street station was assembled on trial on vacant land at Hither Green, before being dismantled and transferred to a pre-prepared site at Cannon Street itself.
Both British Railways

On the South Western Division, the lot of the travelling public was improved (albeit less obviously) by new stock maintenance facilities built at East Wimbledon for inspecting and maintaining trains working on the routes from Waterloo to Horsham, Guildford, Aldershot and the Thames Valley. On 3 October, the Southern Region General Manager opened the new 83,000sq ft depot by driving General Manager's saloon No DB975025 (a converted Hastings line buffet car) over a treadle which automatically opened the depot doors and activated a curtain of warm air across the entrance to prevent cold draughts. The new depot was built on the site of the ex-LSWR Durnsford Road Power Station, and contained tracks for three 12-car trains, three eight-car trains and two four-car trains, this last being spanned by a 25-ton electric overhead travelling crane. For safety reasons, no energised conductor rails were laid in the depot, and shunting power was supplied by cables from overhead live conductor wires obviating the need for a shunting loco. Outside, berthing sidings for 152 coaches were provided, 122 more than previously, together with administrative and messroom buildings.

On the freight side, and notwithstanding the hiatus in the Channel Tunnel plans, a new Transfesa goods terminal for the handling of horticultural and agricultural produce from Europe was opened on 28 April by the Chairman of the BRB, Richard Marsh, at Paddock Wood in Kent. The £2 million terminal was constructed not only to speed up the discharge of traffic (primarily from Spain) but also to expedite the return and improve the utilisation of international ferry vans, and was capable of handling three trains of up to 25 wagons simultaneously in a covered area of over 30,000sq m.

LONDON BRIDGE CONTRASTS

Right:
The gloom of the old SE&CR footbridge is evident from this photograph taken on 6 July 1974, shortly prior to replacement. *Kevin Lane*

Below:
This 1975 view of the new footbridge illustrates the wider, more spacious profile, the durable rubber flooring, bright fluorescent illuminator and the easy-to-clean panelling. Note also the platform indicators suspended from the ceiling. *British Rail*

1975

At a time of severe economic recession and high inflation, problems are bound to arise.

Rt Hon Richard Marsh

Right:
The gas turbine-powered APT-E was preparing for its August 1975 British speed record of 152.3mph when photographed on test between Goring and Pangbourne on 24 July. *D. E. Canning*

Right:
On the morning of the 'Rail 150' cavalcade, 31 August, the exhibits prepare for the 'off' at Shildon. The locomotive nearest to the camera is ex-North Eastern Railway 0-4-0 No 1310 which did not take part in the 'Rail 150' cavalcade, but was one of the exhibits at the Shildon exhibition. *British Rail*

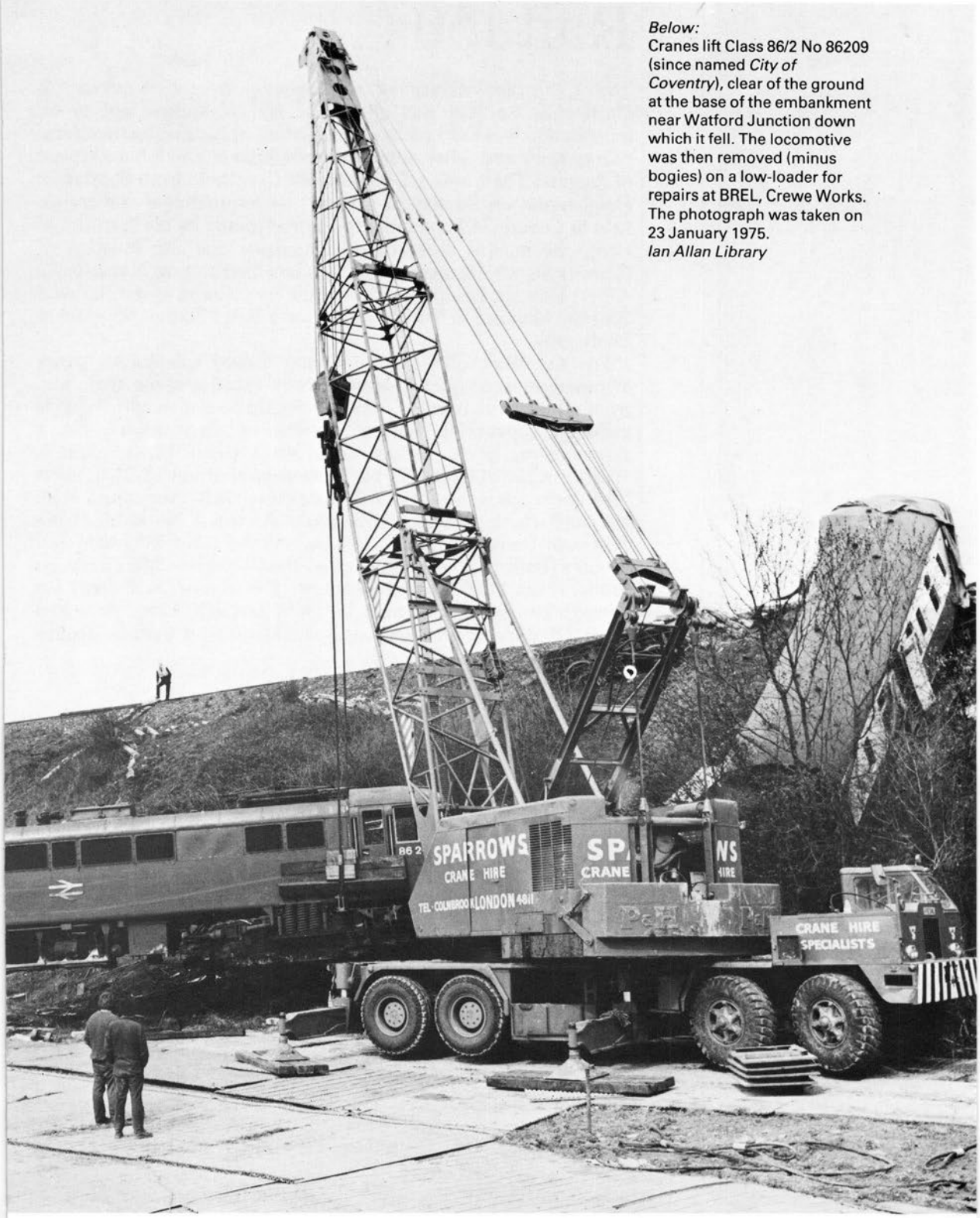
A Diary of Disasters

The safety record of rail travel is so good that it is taken for granted by passengers, but confidence was slightly shaken in the early part of 1975 by a series of serious accidents on British Rail and London Transport. In the period covered by this volume, the most serious crashes prior to 1975 had occurred at Hixon on 6 January 1968, Eltham Well Hall on 11 June 1972 and at Ealing Broadway on 19 December 1973, and had not seemed to form a part of any pattern, but the early part of 1975 was marked by a number of serious crashes in quick succession.

Spectacular in appearance, but luckily involving only minor injuries to passengers, was a collision on 23 January involving the late running 19.10 Manchester Piccadilly-Euston. This train, which was double-headed by electric locomotives Nos 83003 and 86204, struck a metal pallet that had fallen from a northbound container train south of Watford Junction. The London-bound train was immediately derailed with leading locomotive No 83003 fouling the down main line, in turn causing the derailment of the approaching 22.15 Euston-Glasgow sleeper hauled by No 86209. Its speed had already been reduced by the alert driver, since track circuits, broken by the derailment, had caused the replacement of signals to danger, but nevertheless No 86209 and the leading full-brake coach plunged dramatically down the 50ft embankment from the bottom of which it was recovered in a military-style exercise three months later.

The worst accident ever to occur in the history of London Transport occurred a month later, on 28 February, when the 08.37 Drayton Park-Moorgate train failed to stop at the Moorgate terminus and rammed the blind end of the refuge tunnel, killing 41 people (including the driver). The cause of the accident has never been adequately explained, but a consequence has been the installation of track circuit-operated time releases — with automatic brake trips if speed is shown to be too high — in similar locations.

Further changes to signalling operating practice followed the report of the Inspecting Officer relating to an accident at Nuneaton, in which the London Midland Region unfortunately distinguished itself by derailing the train in which the then Minister of Agriculture, Fred Peart, was travelling. In her 1974-1976 Diaries, Barbara Castle describes how to her surprise Mr Peart turned up at a cabinet meeting on the following Monday, 9 June, with 'dark blotches under his eyes from the shock of the rail crash in which he was involved'. In his report the Inspecting Officer, Maj Rose, concluded that the accident had been caused by the driver approaching Nuneaton at about 80mph after forgetting a temporary 20mph speed limit due to the absence of a properly lit propane gas advance warning board. As a consequence of this accident portable AWS equipment providing drivers with audible warning of temporary speed restrictions is now installed in conjunction with warning boards to avoid a recurrence of this type of accident. Four passengers and two sleeping-car attendants died in the accident and 10 passengers were seriously injured.

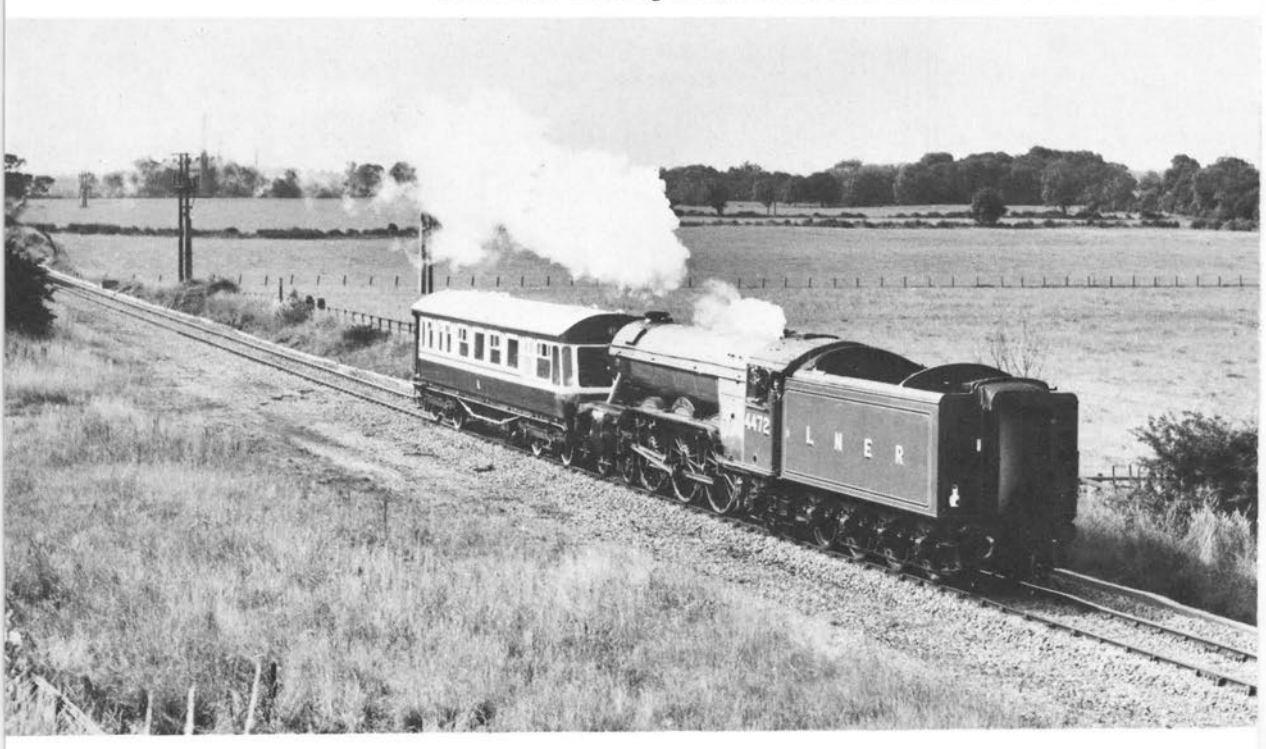


Below:
Cranes lift Class 86/2 No 86209 (since named *City of Coventry*), clear of the ground at the base of the embankment near Watford Junction down which it fell. The locomotive was then removed (minus bogies) on a low-loader for repairs at BREL, Crewe Works. The photograph was taken on 23 January 1975.
Ian Allan Library

Rail 150

The 150th anniversary of the opening of the Stockton & Darlington Railway was an excuse for celebration not to be missed, and was marked by an exhibition of historic locomotives, rolling stock and other railway memorabilia at Shildon at the end of August. There was a Grand Steam Cavalcade from Shildon to Heighington on Sunday 31 August, an international conference held in London in September sponsored jointly by the Institute of Civil, Mechanical & Electrical Engineers and the Institute of Railway Signal Engineers, a Royal Gala Celebration in the Royal Albert Hall, an Exhibition Train, and the opening of the National Railway Museum in York and the North Road Station Museum in Darlington.

For the 'Rail 150' exhibition and Grand Cavalcade, steam locomotives and other historic railway vehicles made their way from all over the country, often under their own steam. Exhibits included a working full-size replica of Stephenson's No 1 *Locomotion*, GNR Stirling 4-2-2 No 1 (built 1870), LBSCR 'Terrier' Class A1X 0-6-0T No 72 *Fenchurch* (built 1872), LNWR 'Precedent' class 2-4-0 No 790 *Hardwicke*, MR Compound 4-4-0 No 1000 (built 1902), LNER Class A3 4-6-2 No 4472 *Flying Scotsman* (built 1923), LNER Class A4 4-6-2 No 4498 *Sir Nigel Gresley* (built 1937), GWR 'Manor' class 4-6-0 No 7808 *Cookham Manor* (built 1938), SR 'Merchant Navy' class 4-6-2 No 35028 *Clan Line* (built 1948 and rebuilt in 1959) and BR Class 9F 2-10-0 No 92220 *Evening Star*, the last steam locomotive built for British



Railways and constructed as recently as 1960. Motive power other than steam was not ignored, and was represented by ex-Metropolitan Railway Electric Bo-Bo No 12 *Sarah Siddons* (built 1922), London Transport 1973 Piccadilly Line tube stock, and the prototype HST unit No 252001. As part of the opening ceremony, ex-LMS 'Black Five' 4-6-0 No 4767 owned by the North Eastern Locomotive Preservation Group was named *George Stephenson* by the Rt Hon William Whitelaw, then Deputy Leader of the Conservative opposition and grandson of the Chairman of the LNER who had officiated at the centenary celebrations in 1925.

On 27 September, the National Railway Museum at York was formally handed over by BRB Chairman Richard Marsh to the care of the Department of Education & Science before being officially opened by HRH Prince Philip, Duke of Edinburgh. The latter had arrived at York station from Darlington in the Royal Train formed of stock worthy of the museum itself, including Royal Saloon No 798 built by the LNWR as long ago as 1906. Other important guests had arrived earlier (if delayed) in the prototype HST from King's Cross.

The new museum was arranged around two turntables originally installed in York North MPD, the main display hall being located in what used to be Nos 3 and 4 sheds. Unlike its predecessors at York and Clapham, the new museum enjoyed permanent rail connections to the BR system permitting easy exchange of exhibits or, as in later years, temporary removal for use in steam. Exhibits

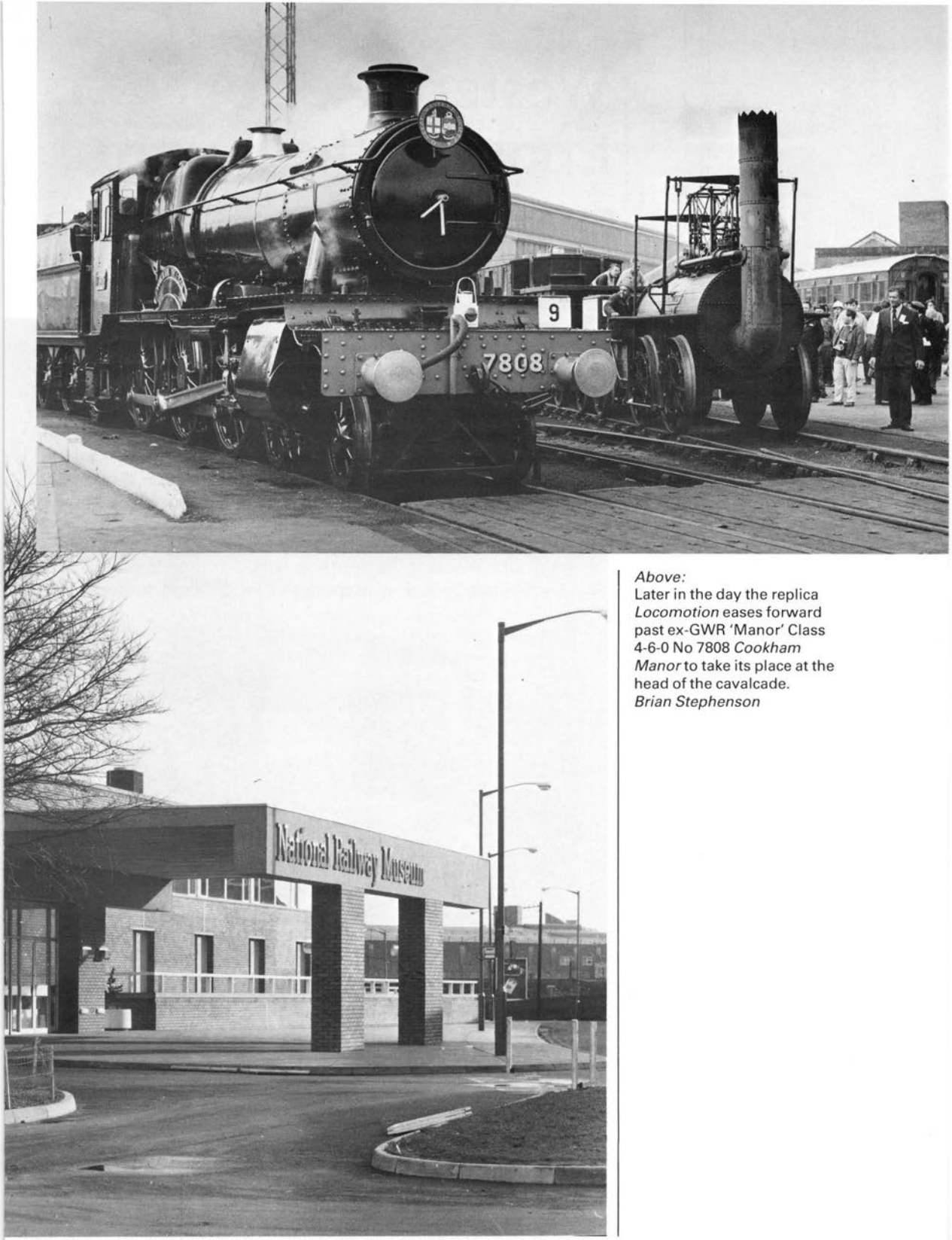
Left and Above:
On its way to Shildon, ex-LNER Class A3 4-6-2 No 4472 *Flying Scotsman* hauls an ex-Caledonian Railway observation coach between North Road and Heighington on 18 August 1975, whilst its spare second tender is hauled through Darlington Bank Top on the same day by ex-GWR 0-6-0PT No 7752 and ex-LMSR 2-6-2T No 41241 from the Keighley & Worth Valley Railway. On the left can be seen Class 9F 2-10-0 No 92220 *Evening Star*, Class 4MT 2-6-0 No 43106 and ex-Southern Railway Class S15 4-6-0 No 841.
I. S. Carr/M. Hall

on view at the opening included the Stirling Single No 1, and No 92220 *Evening Star* recently returned from Shildon. Also present were SECR Class D 4-4-0 No 737, NER Bo-Bo electric No 1 (BR No 26500), GWR 2-8-0 No 2818 and a number of royal and other coaches. Of particular interest is a sectioned rebuilt 'Merchant Navy' class locomotive, No 35029 *Ellerman Lines*, and all the exhibits benefit from being positioned in a hall of appropriate proportion and atmosphere. To mark the 150th anniversary the Post Office issued a set of four stamps on 13 August, valued at 7p (the second class stamp at the time), 8p (first class), 10p and 12p.

Right:
The exterior of the National Railway Museum in Leeman Road, York. The 8ft 10in diameter wheels are from an ex-Bristol & Exeter Railway 4-2-4T locomotive.
British Rail

1825
1975
Passenger Railways
150th Anniversary
British Rail, in conjunction with other organisations, are co-ordinating a programme of celebrations to mark the 150th anniversary of the origin of passenger railways.
The celebrations will take place throughout 1975, building up to the actual anniversary date on 27 September. Activities planned include a British Rail Exhibition Train which will tour the country. The exhibits will feature railway developments pioneered by Britain in the past, together with future developments. Other highlights will include special package tours and steam-hauled charter trains; Open Days at the British Rail Engineering workshops throughout the country; a Grand Steam Cavalcade between Shildon and Heighington on 31 August, led by a full scale working replica of Locomotion No. 1; a gala evening in the Royal Albert Hall on 25 September; and the opening of the National Railway Museum at York on 27 September.
A colour brochure will be available in April from your local British Rail station and will include a programme of the anniversary celebrations – but see over for details of some selected events.

Above:
Leaflet advertising the 'Rail 150' celebrations.



Above:
Later in the day the replica *Locomotion* eases forward past ex-GWR 'Manor' Class 4-6-0 No 7808 *Cookham Manor* to take its place at the head of the cavalcade.
Brian Stephenson

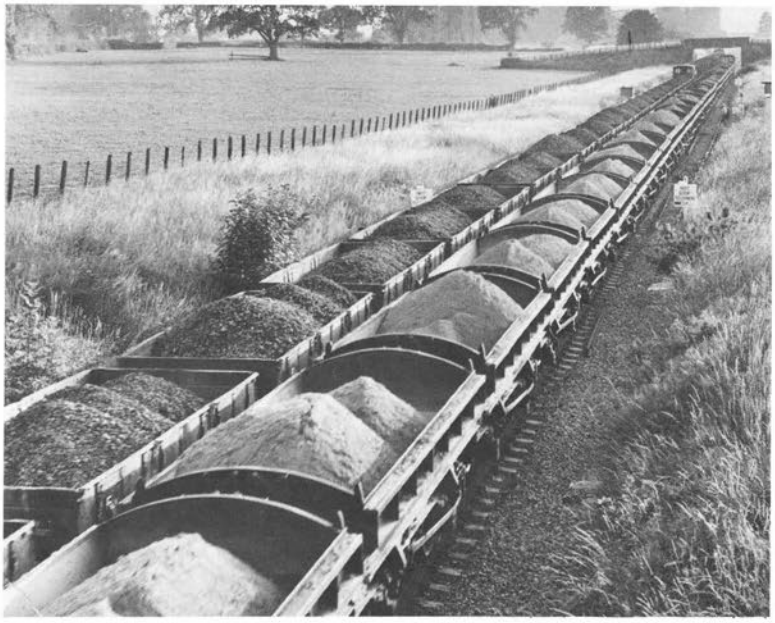
Western Region Looks to the Future

Although timetable changes on the Western Region introduced on 6 May 1975 merely 'marked time' in preparation for the full introduction of HST services in 1976, the apparent lack of change masked the preparation for the new era in a number of ways. The introduction of HST services had been delayed by difficulties in 1974, including the three-day week, the ASLEF pay dispute involving high speed trains, and the 1974 governmental phasing back of BR investment programmes, but many of the seeds of change were sown in the 1975 timetable.

Most obvious was the introduction of the prototype HST in revenue-earning service. From 5 May it commenced operation on a Paddington-Bristol-Weston-super-Mare roster, starting on the 07.45 Bristol Parkway-Paddington service. Ironically, this service was decelerated by 19min in the new timetable and diverted via Bristol Stapleton Road, because a 24-mile stretch of the direct South Wales main line between Westerleigh Junction (near Bristol Parkway) and Wootton Bassett was closed completely on 5 May for a five-month period in preparation for 125mph running. The

Right:
On its first revenue-earning service, the prototype HST approaches Stapleton Road, Bristol, forming the 07.45 Bristol Parkway-Paddington service on 5 May 1975. *P. J. Fowler*

Right:
The HST included the first examples of Mk 3 restaurant cars. The interior of the buffet car, as well as the hair styles and fashions of 1975, are seen in this view. *British Rail*



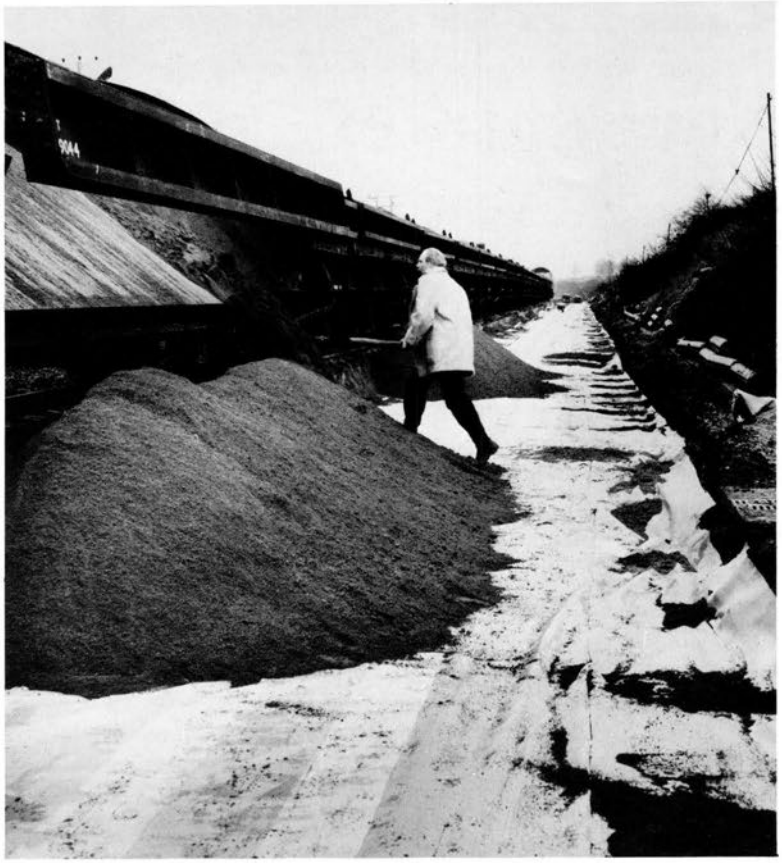
Left:
On the South Wales main line, a train of old ballast, seen on the left, passes a train of special sand blended from sand and limestone dust as part of the track relaying in preparation for HST working. *British Rail*

Western Region had decided that a five-month shutdown was preferable to a three-year period of intermittent work which would have been necessary if the planned upgrading had been carried out in a schedule of conventional engineering possessions, especially as the clay formation under much of the line required complete reblanketing. This work involved dismantling the track formation completely, digging out the clay, spreading 3in of sand below the previous track level, positioning new drainage, laying sheet polythene over the lower sand level to feed into the drains, and finally lining more sand above the sheeting before re-laying 12in-deep ballast and track. Nine route miles were completely reblanketed at a cost of £100,000 per mile but 12½ route miles required only ballast cleaning and tamping at a cost of £20,000 per mile. On completion, the line speed was raised to 125mph from just outside Paddington all the way to Bristol Parkway, subject only to lower speeds caused by complicated track layouts at Reading, Swindon and Wootton Bassett Junction, and at Chipping Sodbury and Alderton Tunnels for aerodynamic reasons.The line reopened on 3 November when the prototype HST operated its first revenue-earning service to South Wales.

The prototype HST was joined on the Western Region by the prototype APT-E for its high speed test programme in July and August, and on Sunday 10 August created a new British speed record when it maintained a speed of 152mph over a distance of approximately five miles between Swindon and Reading.

As the first of its new generation of train sets commenced operation on Western Region, another nail was placed in the coffin of the Region's unique hydraulic locomotive project. The last of the 'Warship' class 42 and 43 locomotives had been withdrawn at the end of 1972, as had the smaller Class 22 machines, and 1975 saw the end of the Class 35 'Hymeks' and the twilight of the Class 52 'Westerns', a few of which surprisingly soldiered on until the early months of 1977. Representatives of Classes 35, 42 and 52 have been preserved and now see active service on private railways.

Right:
This view shows the sand mix being tipped from hopper wagons on to the polythene base sheet. The pipes visible on the right of the picture will form new drains. *British Rail*



Below:
While the South Wales main line was closed, South Wales services were diverted via Bath and Stapleton Road, Bristol. Class 47 No 47507 heads the diverted 14.50 Paddington-Swansea through Bath on 8 May 1975.
Philip D. Hawkins

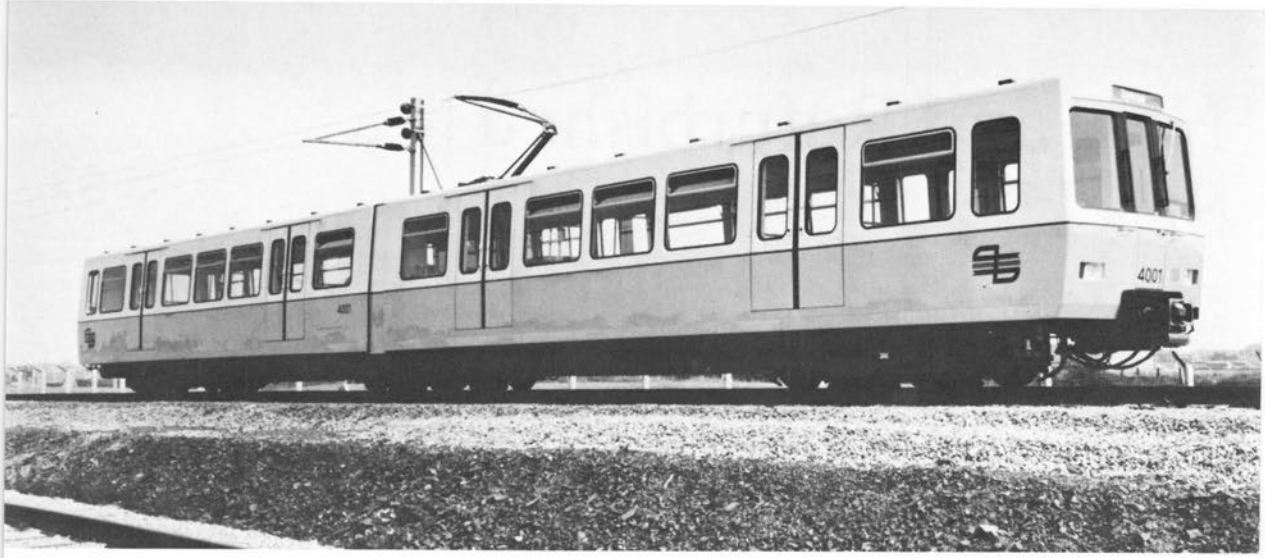
New and Refurbished Stock

Whilst passengers on the Western, London Midland and Eastern Regions became accustomed to the air conditioned comfort of HST and Mk 3 coaches, travellers on the Southern Region saw no prospect of new stock, so refurbishment of existing vehicles was the only alternative.

New 4BEP and 4CEP electric multiple-unit main line stock (now Classes 411/3, 411/4, 411/5, and 412/3) had been introduced in 1959 and 1963 (based on prototypes built in 1956) following the 1955 Modernisation Plan. They had been built in connection with the Kent Coast electrification schemes, and it is anticipated that many of these four-car units (of which 133 sets were built) will have to see service into the 21st century. The original units were closely based on the contemporary Mk 1 standard locomotive-hauled design originally introduced in 1951, and by 1975 had begun to appear more than somewhat dated. The SR Rolling Stock Working Group saw little likelihood of their replacement with new stock at the end of their 'book life' in the mid-1980s and investigated ways of extending their commercial and mechanical lives.

Authority was given to refurbish extensively one unit during a

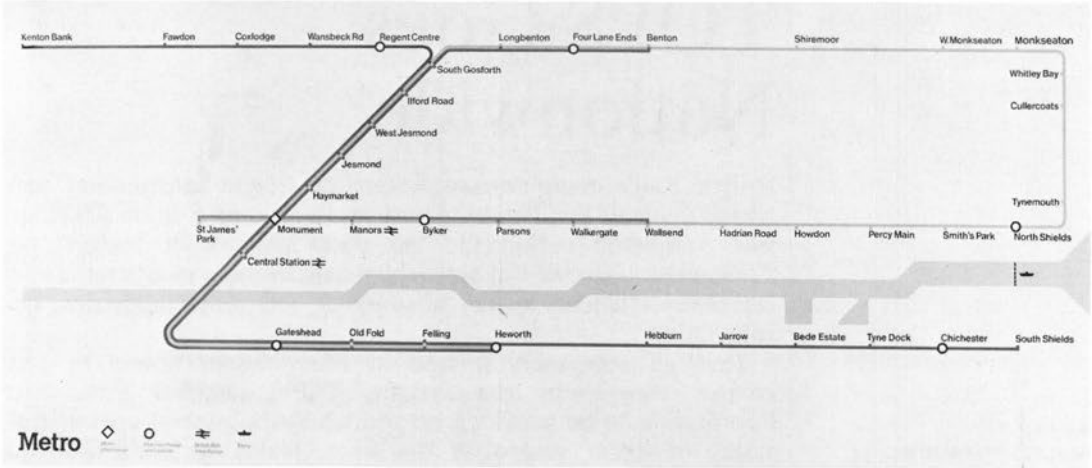
Left:
Despite unchanged cab ends, the altered window arrangement of the refurbished 4CEP (Class 411) unit makes it easily distinguishable from the original units in these contrasting views of unmodernised No 7133, photographed at Dover Marine on 27 August 1975 attached to a Motor Luggage Van (MLV) forming the 11.08 Dover Marine-Victoria service, and refurbished unit No 7153 on show at Waterloo for a Press inspection on 10 November 1975.
R. I. Wallace/C. Long



Above:
A view of prototype Tyne & Wear Metro unit No 4001, above ground and clearly showing the pantograph and lightweight catenary equipment. *Ian Allan Library*

Right:
The prototype unit is seen in the tunnel section of the test track at Beckworth. Note the paved trackbed.
Ian Allan Library

major works overhaul for experimental purposes and 4CEP unit No 7153 was unveiled in its new guise at Waterloo in November 1975. Externally, no change was made to the driving cabs, but the new unit could easily be distinguished from its brethren by major alterations in the location and provision of the guard's accommodation. The standard CEP/BEP arrangement whereby a guard's van was provided behind each driver's cab (ie two vans per unit) was superseded by the positioning of the van in the centre of the unit in which a security cage could be provided. On one side of this new guard's van was a single second class compartment. Four first class compartments were provided in the same vehicle but elsewhere all accommodation was provided in second class open saloons. Internally, all bodyside panels and mouldings were replaced with durable damage-resistant surfaces, new seats similar to those used in Mk 3 coaches were provided (including removable cushion covers), fluorescent tube lighting was fitted in the open saloons, double-glazed windows were installed and a public address system was fitted for evaluation. To contain costs, new bogies were not provided, despite the infamous riding qualities of the units even when fitted (as were the later units) with Commonwealth bogies.



Above:
Diagrammatic map of the Tyne & Wear Metro as originally planned. Some changes were made to the network as finally built. Kenton Bank station became known as Bankfoot and Parsons as Chillingham Road. No station was built at Coxlodge. *Ian Allan Library*

Left:
London Transport 1973 stock was first introduced into service in 1975 on the Piccadilly Line in preparation for the extension to Heathrow Airport which was opened in December 1977. The contrast in size between the 1973 tube stock and Metropolitan Line A60 stock is clear in this view taken outside Rayner Lane. *Colin J. Marsden*

After trials during which adverse comments were received about the new seat designs in particular, the Southern Region decided to refurbish the whole of the BEP/CEP fleet (with detail differences from the prototype) and all were refurbished at Swindon works before its closure.

Five months before Southern Region passengers had sight of their modernised unit, the prototype articulated tramcar for the Tyne & Wear PTE's new Metro was given its first demonstration. Because the metro concept was so new in Britain, the government appeared reluctant to offer financial support, especially in the light of the costs arising from disputes between British Rail, the PTE and the rail unions, concerning manning levels and the control of operations. An advanced testing ground to prove equipment and to provide training facilities was built at Backworth, including a 1½-mile test track and 110yd long 'mock' tunnel to simulate metro conditions.

Designed to run in real tunnels, on London Transport the first unit of the 1973 stock intended for use on the Piccadilly Line to London Heathrow Airport was introduced in 1975. The design incorporated widened entrance vestibules to provide space for airport travellers' luggage.

TOPS Goes Nationwide

British Rail's computerised system of freight information and transit control, the Total Operations Processing System (TOPS), was completed nationwide 'on time and within budget' on 27 October when the last area, the northeast, was inaugurated at a ceremony attended by the Minister of Transport Industries, Dr John Gilbert.

Through computers housed at Marylebone, linked to 155 centres throughout the system, TOPS enabled up-to-date information to be provided on the whereabouts and operational status of every wagon in the fleet, which included 240,900 BR-owned wagons; 20,000 privately owned wagons, 11,900 ferry wagons, 30,800 service wagons, 5,500 parcel vans and 4,400 brake vans, together with 2,700 locomotives, the average number used daily on freight work. It was estimated that 150,000 wagon movements would be recorded daily on the system, an important feature of which was the computer's ability automatically to assign a predetermined destination to a wagon immediately it was reported as empty.

It was anticipated that the more efficient use of wagons made possible by TOPS would enable the wagon fleet to be reduced by 20,000, representing a capital replacement saving of at least £50 million and an annual saving on operating and maintenance costs of £3 million.

Below:
Accompanied by the Chairman of the British Railways Board, Richard Marsh, the Minister of Transport Industries — Dr John Gilbert — inspects the communication data control centre during his tour of BR's new TOPS computer terminal. At the formal switching-on ceremony, TOPS was described by Richard Marsh as 'the most important single development for improving freight operation efficiency in the history of our railways'. *British Rail*

1976

1976 was a year in which the railway community as a whole (there is such a thing, as I have discovered) has a right to take pride.

Peter Parker, MVO

CONTRASTS IN STATION OPENINGS

Right:
Birmingham International opened without ceremony in January 1976, but was not formally inaugurated until September. *Sam Lambert*

Right:
On 5 May 1976, the newly constructed platforms played host to two electric units — No 312202 on a special Birmingham New Street-Birmingham International shuttle service and Class 310 unit No 061 forming the 15.00 Euston-Birmingham semi-fast. Note the detail differences in cab window design between the new unit on the left and the older unit on the right. *Philip D. Hawkins*

Timetable Changes and HST

The timetable changes introduced at the beginning of the 1976/77 season in May contained few surprises, although all Regions had to take account of the national economic recession and passengers' opposition to the massive fare increases introduced at a period of rampant inflation. On the London Midland Region there were further consequential changes following the withdrawal of through London-Glasgow services via the Settle to Carlisle line in 1976; and on the Eastern Region cutbacks in services, designed to have a minimal effect on the passenger market, were introduced with a view to saving £1 million per annum whilst maintaining business in anticipation of the HST services in 1978. One casualty of these economies was the 'Tees-Tyne Pullman', although loadings and revenue justified the retention of the 'Yorkshire Pullman' and 'Hull Pullman'.

In contrast, the Western Region timetable commencing in October represented 'a historic landmark in the evolution of rail travel in Britain' (*Modern Railways*) when the 125mph era was introduced on services between Paddington and Bristol/South Wales. Savings of 20min between Paddington and Newport and 23min between Paddington and Cardiff enabled the Western Region to meet competition from the M4 motorway, but the biggest impact of all was made by the 73min timing between Paddington and Bristol Parkway which gave an average start-to-stop speed of 91.43mph. Further improvements in timing on the South Wales line were planned for May 1977.

Initially, before all 27 HST units had been delivered, 15 high

Below:
Before their final withdrawal the East Coast Pullmans carried the blue and grey 'reversed' Pullman livery. Built in 1960/61, these coaches compared unfavourably with the more modern Mk 2d vehicles which comprised the second class portion of the trains, and this led to their demise. In this view an up Pullman descends Holloway Bank on the approaches to King's Cross powered by one of the original Class 47s, No 1519, on 22 March 1973. *Brian Morrison*

Below right:
The new look on the Western Region. Fresh from works the second production HST unit, No 253002, heads east from Bristol Temple Meads on a trial run on 29 April 1976. *D. E. Canning*

speed workings were introduced in October between Paddington and Swansea and eight between Paddington and Bristol. By May 1977, 21 daily rosters would be covered by the new trains, the first of which (No 253001) began commissioning trials on the Eastern Region in March 1976 before transferring for crew training to the Western Region in mid-April.

The introduction of HSTs necessitated the construction of the first new catering vehicles for 20 years, and a variety of vehicles were to be built for the different markets of the Western and Eastern Regions. Trailer Restaurant Unclassified Kitchen (TRUK) vehicles were designed to provide full meals to first class passengers in adjacent coaches, with half the catering vehicle laid out for 2+1 seating for second class passengers, whilst the Trailer Restaurant Second Buffet (TRSB) included seating in a 2+2 layout providing a choice of hot and cold snacks and drinks, but not a full meal service. The TRUK/TRSB mix was based on business trends prevalent in 1970, before the period of national recession and inflation, and a third design, the Trailer Restaurant Unclassified Buffet (TRUB), was developed for use on the Western Region, incorporating an extended kitchen area and 2+1 seating from which a full restaurant service could be supplied to the 17 seats in the vehicle itself, and the 24 first class seats nearest to the catering vehicle.

New maintenance depots to service the Western Region's HST fleet were built at Old Oak Common (outside Paddington) and at St Philip's Marsh (Bristol), and later an additional depot was constructed at Plymouth Laira.

In the first two months of limited HST operation, passenger traffic increased by 15%, and *Modern Railways* rightly forecast that, in due course, the seven-car Western Region sets might need to be increased by one car to match the eight-car sets planned for the Eastern Region.

Above:
The HST gave BR marketing men an unparalleled opportunity to publicise Inter-City services, and the 'Inter-City 125' branding really caught the public imagination, boosting traffic receipts everywhere it was introduced. This was an early poster reproduction to promote the introduction of HSTs on to the Western Region, and it emphasised the eye-catching profile of the new trains.

Great Northern Electrics

More than 70 years after electrification proposals were first put forward by the Great Northern Railway in 1903, electric services commenced — albeit initially not on GNR tracks — under the £63 million Great Northern Suburban Electrification Scheme in August 1976.

A short section of the former Great Northern & City Railway (operated by London Transport until October 1975) was reopened by the Eastern Region on 10 August only between Drayton Park and Old Street since passengers could not be carried forward to the Moorgate terminus pending completion of new escalators. On 8 November, the full inner-suburban electric service commenced with through services to Moorgate from Welwyn Garden City and Hertford North via Finsbury Park, providing up to 15 trains per hour south of Wood Green during the peak. After the inauguration of the new services in November, Eastern Region rush-hour commuter trains to Broad Street and Moorgate (Metropolitan) via Farringdon and the Metropolitan Widened Lines were withdrawn. The new electric service was provided by new three-car units of Class 313, which externally resembled the 4PEP experimental units tested on Southern Region, and 64 sets were constructed by BREL at York. Because of the difficulty and cost of erecting overhead wires through the restricted clearances of

Below:
The first BR train to run through the Northern City Line 'tube' section from Drayton Park was Class 313 No 313006, seen here at Highbury & Islington on 15 July 1976.
British Rail

the tunnel section south of Drayton Park, the Class 313 units were equipped to operate on both 25kV ac overhead contact and 750V dc third rail systems. Special changeover apparatus was provided at Drayton Park to enable the voltage switch to take place. Each set had a seating capacity of 232 second class, and a maximum permitted speed of 75mph under the 25kV overhead wires and 30mph through the tunnel section. The units were designed with passenger-operated (but traincrew released) sliding doors and delivered in standard blue and grey livery. They were to be maintained at a purpose-built depot at Hornsey.

After a long and well-publicised build-up, the new service almost immediately received a bad press arising in the main from late delivery of the new units. On the opening day in November only the operating minimum of 28 units was available for service and problems were aggravated by efforts thereafter to introduce new units into service without normal test running. Problem areas included the door mechanisms and the pantograph and trip-cock position detectors. These problems resulted in an unacceptable level of delays and cancellations which the Divisional Manager apologetically sought to explain in a five-page letter to all passengers. On the worst occasion, 91% of trains on the inward peak were more than 5min late!

1976 also saw work start on the electrification of the 6¼-mile Witham-Braintree branch of Eastern Region in September, as well as the approval by the Secretary of State for Transport, William Rodgers, of an £80 million scheme to electrify (on the 25kV ac system) the 50 route miles between Bedford and St Pancras, together with the link via the Metropolitan Widened Lines to Moorgate via Farringdon and Barbican.

Below:
Calling at one of the stations rebuilt as part of the Great Northern electrification scheme, Class 313 No 313058 arrives at Wood Green on an evening peak-hour service to Gordon Hill on 9 August 1977. Note the orange line at cantrail level to warn staff against coming too close to the 25kV wires, and the similarity of the stock to the experimental 4PEP unit. *Martin Higginson*

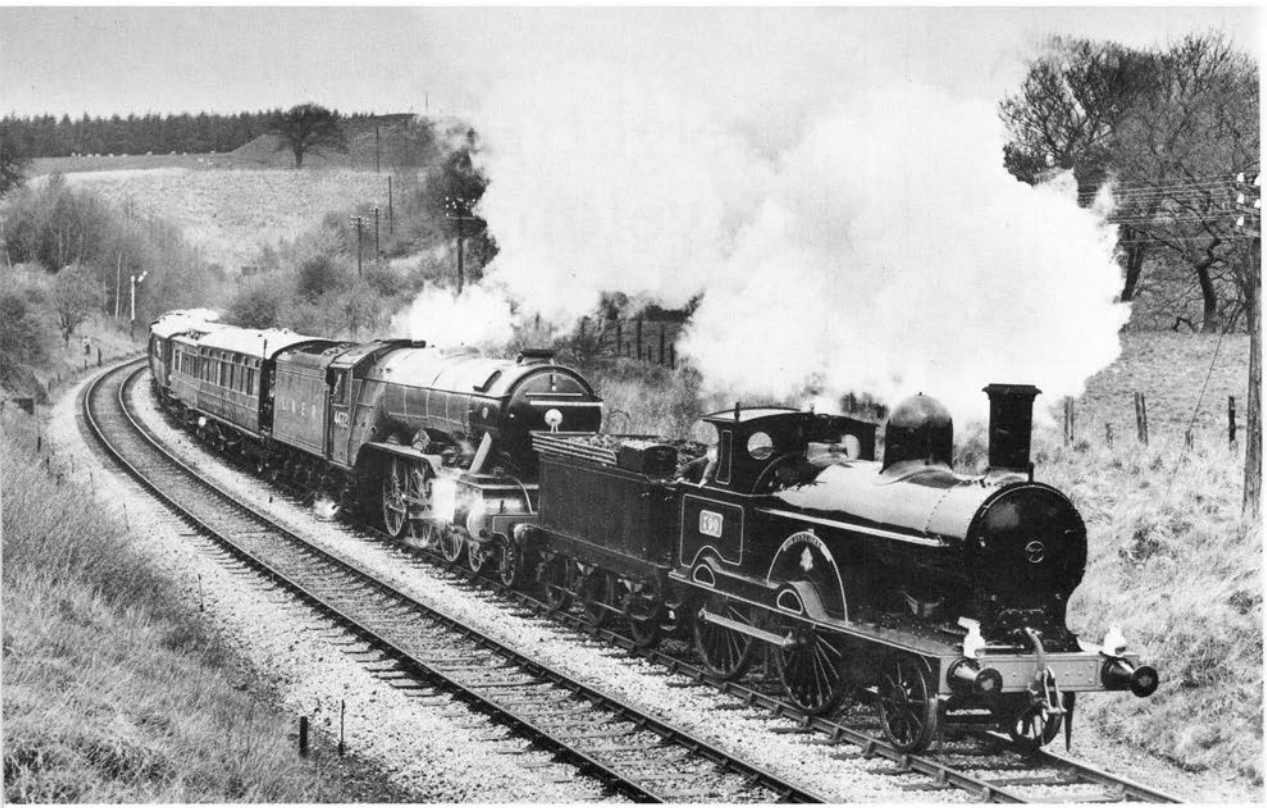
Centenary of the 'Long Drag'

In the light of the publicity that has been given to the ex-Midland Railway main line between Settle and Carlisle, it is instructive to note how little publicity and criticism appeared in the railway press at the time of the diversion of the daytime London-Glasgow service (previously the 'Thames-Clyde Express') away from the line in May 1976.

Perhaps buoyed up by the success of the first DalesRail excursions in 1975, the reopening for DalesRail trains of Armathwaite, Langwathby and Lazonby stations in 1976, and the apparent 'inter-city' character of the Nottingham-Glasgow trains that replaced the expresses to London, greater publicity was given to the centenary celebrations of the opening of the line held on Saturday 1 May, although it is perhaps significant that an article in the *Railway Magazine* at the time was entitled 'Outlook Unsettled'.

Departing from Euston instead of the ex-Midland Railway terminus at St Pancras normally associated with the Settle to Carlisle line, the centenary train was hauled by Class 87 No 87001 (recently named *Stephenson*). This was the first ac electric main line locomotive to be honoured with a name, when its new nameplate was unveiled by the President of the Stephenson Locomotive Society on 14 January 1976 to commemorate the 150th anniversary celebrations of the Stockton and Darlington Railway held in 1975. This naming ceremony marked a departure from the Board's previous policy (ignored in traditional fashion by the Western Region) of generally not naming diesel and electric

Right:
The *Stephenson* nameplate originally affixed (by special dispensation) to Class 87 No 87001 and since transferred to thyristor-controlled prototype No 87101. *British Rail*



Above:
The Settle to Carlisle centenary train from Carnforth, headed by *Hardwicke* and *Flying Scotsman*, approaches Wennington on 1 May 1976.
L. A. Nixon

locomotives and preceded a policy of endowing names on locomotives that some consider has now gone to the other extreme. The name *Stephenson* was transferred in 1977 with the consent of the Society to the unique Class 87/1 thyristor control-fitted No 87101 after No 87001 had been renamed *Royal Scot* by Mrs Peter Parker on 11 July 1977 to celebrate the 50th anniversary of the 'Royal Scot' express. The Settle to Carlisle special from London was hauled over the 'Long Drag' by Class 47 No 47449 and was cleverly timetabled to meet another centenary train from Carnforth at Dent, the highest main line station in England. This train included a number of vintage saloons in private ownership, including representatives from the Caledonian, Great Western, Midland North Eastern and Great Eastern Railways. Last-minute failures prevented the use of Midland Compound No 1000, and the Carnforth centenary special was hauled by a combination of West Coast and East Coast motive power; LNWR 2-4-0 No 790 *Hardwicke* and LNER Class A3 4-6-2 No 4472 *Flying Scotsman*.

The success of this steam special led to the Settle to Carlisle line being designated for main line steam running in 1978, and since then it has played host to restored locomotives of numerous classes including such strangers as SR 4-6-0 No 850 *Lord Nelson* and 'West Country' 4-6-2 No 34092 *City of Wells*. In 1986 BR admitted that the revenue generated by the line exceeded operating costs, in contrast with many Provincial lines, but that the capital expenditure required to maintain Ribblehead viaduct and other structures on the line justified the application for closure which was considered at hearings of the relevant transport users' consultative committees in the spring of 1986.

Freight Developments

The Class 56 Co-Co locomotives, delivery of which commenced in 1976, were the first new class of diesel-electric locomotives to enter service on BR for almost a decade, and were all the more interesting because the first 30 locomotives were constructed in Rumania to meet the urgent need for freight locomotives which arose from an increase in the demand for coal following the 1973 Middle Eastern conflict and the subsequent rise in oil prices. The Rumanian locomotives were built at the Craiova works of Electroputere using some equipment and components supplied from the UK. The remaining 30 locomotives in the initial order were built by BREL at Doncaster Works and the class eventually numbered 135 in all.

Externally the Class 56 locomotives closely resembled the Class 47 mixed-traffic units, but the power unit was a development of the

Below:
A newly delivered Class 56, No 56044, near Syston North Junction at the head of an empty fly-ash train on 27 May 1978. *M. Mitchell*

well-tried English Electric V16 engine which first appeared in LMS prototypes Nos 10000 and 10001 in 1947/48. Although the earlier examples of the class were based at Tinsley depot for coal work, later members of the class were allocated to the Western Region and were used to power the iron ore trains to Llanwern which began operation in March 1976 and which were then Britain's heaviest trains. Each carried more than 2,000 tons. Following the introduction of the 'largest operating blast furnace' in Britain at Llanwern, a regular supply of iron ore from nearby purpose-built iron ore terminals was required and the block train system was best able to meet fluctuations in demand. Following the introduction of such block workings (albeit on a smaller scale) at Scunthorpe and Consett, the terminal facilities at Port Talbot and Llanwern were designed to accept trains of up to 27 100-ton four-axle wagons which could be operated at speeds of up to 60mph. Such a high speed was necessary because part of the route was shared by Inter-City passenger trains, and was only achieved initially if the block trains were hauled by three Class 37 locomotives. The bogie wagons were automatically loaded three at a time from bunkers at Port Talbot and discharged individually (but without uncoupling) at Llanwern by being rotated through 160°.

Below:
Class 37 locomotives Nos 37304/301/302, with a combined output of 5,250bhp, triple-head one of the Port Talbot-Llanwern iron ore trains in 1976, the year the service started. These trains, which were the heaviest on BR at the time, went over to Class 56 haulage from 25 July 1979. *British Rail*

New Stations and Lines

During 1975 a number of small stations throughout the country had been reopened, including Magdalen Road (six miles south of King's Lynn, and closed in 1968) after 18 months of pressure from local inhabitants in co-operation with the pressure group Transport 2000; Ruskington (between Lincoln and Sleaford, and closed in 1961) with the help of a grant from Lincolnshire County Council; and Falmouth (where the line had been shortened in 1970 by half a mile to serve a new halt) when on 5 May 1975 the original terminus was reopened because of the increase in passenger loadings. The new halt was retained and renamed The Dell!

The new stations opened in 1976 were of far greater importance, both in terms of revenue potential and improved transport integration. On 26 January a new Inter-City station, Birmingham International, built at a cost of £5.9 million, was opened midway between Hampton-in-Arden and Marston Green to serve the National Exhibition Centre, a £44 million complex that opened in February. The choice of a site for the NEC had been greatly influenced by the proximity of the Euston-Birmingham main line, Birmingham Airport, and four motorways, and the provision of a main line railway station was considered an essential requirement for success. Its precise location was determined by the need to minimise walking distance from the Centre and to be convenient for the airport to which the station has subsequently been connected by Britain's first 'magnetic levitation' (MAGLEV) transit link.

Birmingham International was provided with five platforms, each 1,000ft long to accommodate 13-coach Inter-City trains, and the design made provision for additional and longer platforms if required. At its opening, it was served by a half-hourly service from Euston during the morning and thereafter hourly, with a similar service in the reverse direction in the afternoon and evening. By the fastest trains, the journey time from Euston was 80min. Since 1977 the station has also been served by trains from the south coast and Reading via Oxford, routed over the link between Leamington Spa and Coventry which had been reopened for passenger traffic because of the increasing importance of Birmingham International and the NEC.

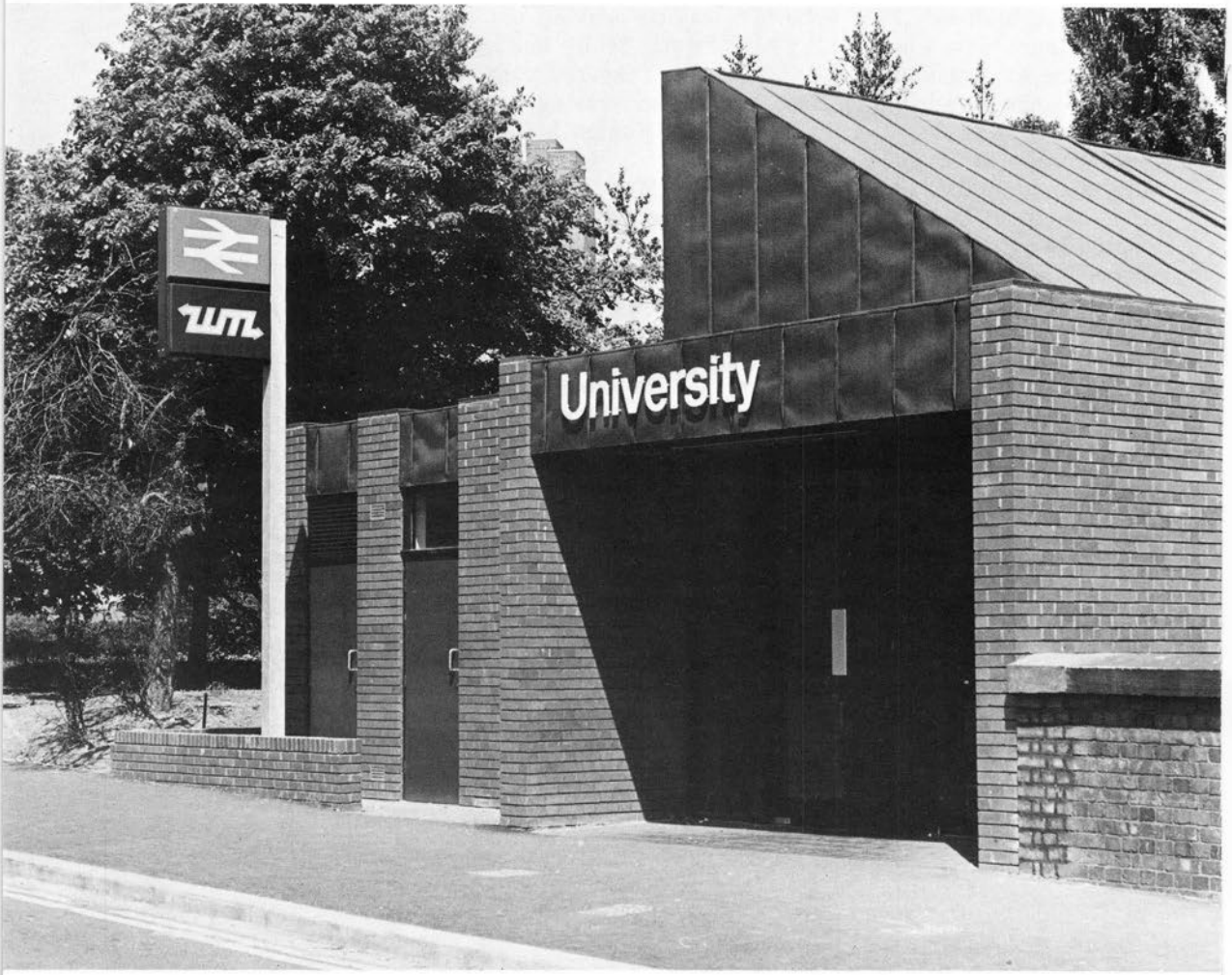
Although opened to traffic on 26 January, the station was not formally inaugurated until 27 September when the new Chairman of the BRB, Peter Parker, and the leader of West Midlands County Council, Sir Stan Yapp, unveiled a commemorative plaque on the concourse. During the following month, when the International Ideal Home Exhibition was held at the NEC over a period of 15 days, more than 136,000 passengers alighted at the new station and passenger numbers dictated the use of an additional standby unit to and from Birmingham New Street twice an hour.

For West Midlands PTE suburban services serving the new station, four new Class 312 EMUs were built, similar in appearance to, but with detail differences compared with, the Class 310 units introduced on Euston suburban workings in 1967. Similar units were delivered to the Eastern Region for services from Liverpool Street and King's Cross.

Another boost for rail emanated from the West Midlands PTE on 15 January 1976, when work began on upgrading rail facilities between Longbridge and Four Oaks at an estimated cost of £4½ million. Phase I, which was inaugurated by the General Secretary of the NUR, Sidney Weighell, who turned the traditional first sod at the site of a proposed new station to serve Birmingham University/Queen Elizabeth Hospital, provided for improvements to existing stations, track and signalling and the provision of new stations at Longbridge, University, Erdington and Five Ways. This development followed the greatly increased public transport use in Birmingham that had occurred, assisted by the introduction of a low-cost bus/rail travel card in 1975.

Not to be outdone, the Greater Manchester PTE opened a £70,000 rail/bus interchange at Altrincham later in the year, on

Below:
The villagers of Magdalen greet Class 31 No 31160 on 5 May 1975 at the reopening of Magdalen Road station.
G. R. Mortimer



Above:
The exterior of the new University station in Birmingham. Note the West Midlands PTE logo, featured on station buildings and multiple-units alike.
J. G. Glover

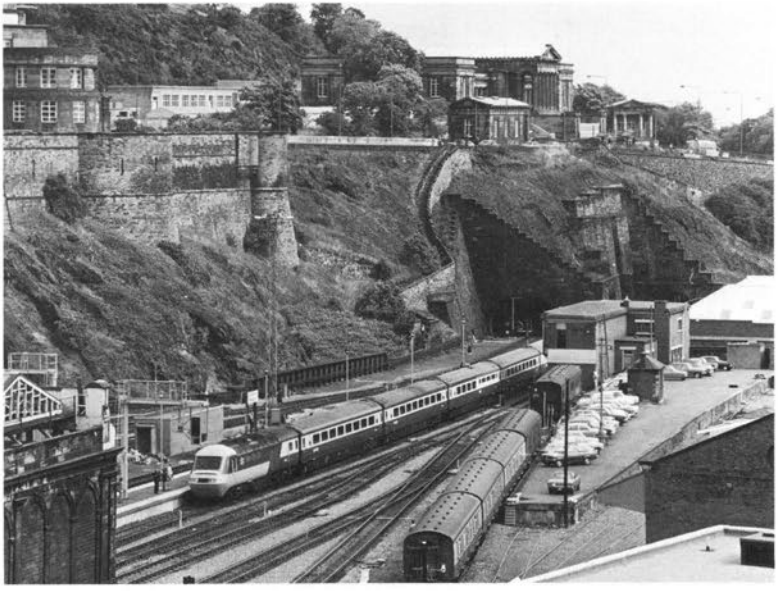
17 November. Claimed to be the first purpose-built interchange in the UK despite incorporating the original railway station, it featured a new bus station built on the site of the station forecourt, and bus departures were co-ordinated by a bus despatcher supplied with up-to-date railway information. To improve interchange with a regular 15min interval rail service, local bus frequencies were increased to a similar pattern and at the end of the first year it was calculated that 500,000 additional passenger trips had been made with a net gain to the PTE of £33,000. Elsewhere on the London Midland Region, commuter suburban services between Matlock and Derby were extended in October to Sinfin adjacent to two Rolls-Royce works, and new stations were opened at Sinfin Central and Sinfin North financed by Derbyshire County Council.

The private sector was not to be outdone and in May a ¾-mile-long extension from Abergynolwyn to Nant Gwernol was opened by the Talyllyn Railway to provide passenger services for the first time (following the granting of the appropriate Light Railway Order) over a mineral extension abandoned in the 1940s.

1977

The country has some right to be proud of its national asset. I find other countries believe we have something to be proud of, and I believe our railwaymen and women have a right to share in that pride.

Peter Parker, MVO



Right:
The HST trail is blazed on the Scottish Region by the use of Western Region unit No 253026 on the Prince's Trust Silver Jubilee special photographed arriving at Edinburgh from King's Cross on 23 July 1977. *G. A. Watt*

Right:
The final official fling of the 'Westerns'. Class 52s Nos 1023 *Western Fusilier* and 1013 *Western Ranger* haul the 'Western Tribute' farewell tour at Pilning, east of Severn Tunnel, on 26 February 1977. *C. L. Caddy*

Withdrawals on the Western

Diesel preservation societies are now not uncommon, and examples of Class 52 'Westerns', Class 55 'Deltics' and other less famous classes can be found lovingly preserved and performing useful work on private railways throughout the land. To the 'Western' class must go the credit for making preservation of diesel locomotives respectable, as by the time the last examples were withdrawn early in 1977 they had acquired a substantial following of supporters described at the time as 'the most fanatical since steam finished on British Rail's standard gauge lines'. The 'Western' Type 4 C-C diesel hydraulics, the final fling of Western Region independence and individuality when introduced in December 1961 (although some members of the class were actually built at Crewe), perpetuated a GWR tradition by the adoption of cast name and number plates (albeit in alloy and not in brass). They also enjoyed the distinction of being painted not only in a variety of experimental colour schemes such as the 'Desert Sand' applied to the prototype, No D1000 *Western Enterprise*, but also the distinction (shared by their smaller diesel hydraulic 'Warship' Class 42 and 43 predecessors) of a maroon livery chosen

Right:
With its silvered buffers and headboard distinguishing the 'Western Talisman' from normal service trains, Class 52 diesel-hydraulic No 1023 *Western Fusilier* is framed by an impressive array of tall semaphore signals as it passes Black Carr Junction, Doncaster, on its way to York on 20 November 1976.
L. A. Nixon

Left:
Ex-GWR 'Castle' class 4-6-0 No 4079 *Pendennis Castle* arrives at Avonmouth Docks on the afternoon of 30 May 1977 on the final English stage of its journey to Australia. *David Eatwell*

by public poll when all other BR locomotives were painted in standard Brunswick Green. All the names given to the class incorporated the prefix 'Western' and were described by a self-admitted supporter as 'pompous, arrogant and superior, resisting any suggestion that they form part of a national system'. The locomotives gained much support from enthusiasts because of their unwillingness to die: from 1970 all diesel hydraulic locomotives were earmarked for early replacement and the first Class 52 — No D1019 *Western Challenger* — was withdrawn in 1973 after a life of only 10 years. As Class 47 and Class 50 diesel electrics replaced 'Westerns' on main line workings, they were scheduled for withdrawal in 1974, but soldiered on, hauling express passenger as well as fitted freight trains, until the end in February 1977. During their last 18 months in BR service the survivors of the class were in great demand for enthusiasts' specials, often graced with appropriate names such as 'Western Requiem', 'Western Lament', 'Western Memorial' and 'Western Finale'. An interesting excursion — the 'Western Talisman' — took No D1023 *Western Fusilier* from King's Cross to York and back in November 1976 and the 'positively final' appearance in BR service took place on 26 February 1977 when No D1013 *Western Ranger* and No D1023 *Western Fusilier* hauled the 'Western Tribute' between Paddington, Swansea, Plymouth and Paddington carrying on its final stage a floral wreath to mark the end.

Even then the Class 52 refused to die, and no less than seven examples survive in various liveries in private ownership (although not all in active service). No D1062 *Western Courier* was fully restored by the Western Locomotive Association and operating on the Torbay and Dartmouth line of the Dart Valley Railway before the end of 1977.

Ironically, the survivors of Class 52 were not outlived by prototype HST No 252001 which was also withdrawn from service in February 1977.

Another much-lamented withdrawal from service on the Western Region was that of preserved GWR 'Castle' class 4-6-0 No 4079 *Pendennis Castle*. After heading a farewell passenger run from Saltley to Didcot on 29 May 1977, No 4079 ran under its own steam to Avonmouth Docks to be transferred to a cargo ship for its journey to a new home with the Hamersley Iron Co in Australia.

Silver Jubilee

Neither D1040 *Western Queen* nor D1049 *Western Monarch* survived long enough to join the rest of the nation in celebrating the 25th anniversary of the Queen's accession, in 1977. This milestone in her reign on 7 June was duly marked by British Rail and its employees, both officially and unofficially.

Official recognition came in the form of a named train — the 'Silver Jubilee' — introduced on the Eastern Region. From Wednesday 8 June this historic name was conferred on the 07.45 King's Cross-Edinburgh and the 15.00 return, both of which sported a headboard incorporating the Jubilee motif, and destination indicators and napkins, etc were similarly adorned.

Elsewhere on the Eastern Region, and probably without high level sanction, the 08.30 Liverpool Street-Norwich and the 11.42 return were named 'The Jubilee' during Jubilee week and two Class 47 locomotives, Nos 47163 and 47164, were decked out by Stratford depot with large (and initially inaccurate) Union Jacks on their sides, with silver roofs and buffer beams.

On the Great Northern Lines, the Jubilee was celebrated by the *North Herts Gazette* by chartering the first ever public electric train from Hitchin to Moorgate, and Unit No 313013 carried an appropriate (although locomotive boiler-shaped) headboard.

On the Western Region, an attempt was officially made on a Bristol-London speed record and an Inter-City 125 'Jubilee Special' was publicly scheduled on 7 June for a start-to-stop average speed of 100mph. In a performance described by O. S. Nock as 'immaculate', unit No 253019 travelled the 117.6 miles between Bristol and Paddington via Bristol Parkway in 68min 23sec at an average speed of 103.03mph, and returned almost a minute more quickly at an average speed of 104.04mph. Speed

Below:
British Rail joined the nation in celebrating the Queen's Silver Jubilee in 1977. At Bath Spa, the forecourt was decorated for the visit of HM The Queen on 8 August 1977, to which she travelled in shortened (and hand-cleaned) HST set No 253025 photographed passing Bathampton.
P. J. Fowler

logs of the journey showed that a maximum of 128mph was not exceeded in either direction.

At slightly lower speeds, but in no less comfort, the Royal Train travelled many miles during Jubilee Year and included two air conditioned Mk 3 Royal saloons in which the Royal Family travelled for the first time during the Silver Jubilee tour to Scotland which commenced on 16 May. The Queen's new saloon No 2903 and the Duke of Edinburgh's new saloon No 2904 were converted from prototype Mk 3 coaches Nos 11001 and 12001 respectively as part of a refurbished train of 10 vehicles, all fitted with air-brakes and electric heating and passed for speeds of up to 100mph. The keys of her new saloon were presented to the Queen by Peter Parker on 16 May and a plaque was fitted to the saloon recording its entering service during Jubilee Year. The external livery of the new saloons was the traditional claret lined out in red at waist and cantrail level. The new coaches replaced LMS saloons Nos M798M and M799M built in 1941 which were the oldest vehicles in the Royal Train save for the LNWR Chairman's saloon No 45000 originally built in 1920 but fitted on a new underframe in 1967.

After the Queen's visit to Scotland in May, the Royal Train was used in many areas of the country during 1977 including the North West (where the Royal party arrived by train at Lancaster in June) and in the Midlands, although for her visit to Weston-super-Mare the Western Region provided a specially re-formed HST (unit No 253025) to give the Queen her first experience of travel in a HST.

For her customary visit to the Derby at Epsom on 1 June, the Royal party travelled in the more venerable vehicles used for short journeys, including two 1906-built LNWR vehicles and a 1908 East Coast saloon, whilst to convey the Royal party from Windsor to Portsmouth on 27 June for the following day's Jubilee review of the Fleet, the Southern Region turned out 4BEP unit No 7020.

Above:
The Silver Jubilee motif as carried as a headboard on the 'Silver Jubilee' Eastern Region services and incorporated on menus and other promotional material. The motif was described as 'A Crowned Lion twixt the Flag of St George and the Scottish Saltire surmounting a globe bearing the British Railways Symbol and surrounded by laurels'. *British Rail*

Below:
The two new Royal saloons are conspicuous as the second and third vehicles in this view of the empty Royal Train stock returning from Harlech to Wolverton, photographed south of Fairbourne (near Barmouth) on 22 June hauled by Class 25s Nos 25221 and 25222. *Ian Allan Library*

Merseyside Link

Following the receipt of a report in the late 1950s that had horrified local officials in publishing the anticipated cost of the road improvements that were thought to be necessary to serve Liverpool's needs for the remainder of the century, British Railways produced an alternative and cheaper plan to extend the ex-Mersey Railway underground railway system. This would link the Mersey/Wirral and Southport/Ormskirk lines under the city to knit together a number of unrelated radial lines in an integrated rapid-transit system. Parliamentary powers for the construction of a loop at the end of the Mersey/Wirral lines to link Exchange and Lime Street stations were obtained under the Mersey Railway Extensions Act 1968, and following the establishment of a Merseyside PTE pursuant to the Transport Act of 1968, further powers for a link to the Southport/Ormskirk lines were granted in 1971.

The Wirral loop is a 3.2km (two-mile) single-track bored tunnel 5m in diameter which starts from the ex-Mersey railway line at Mann Island (on the eastern shore of the Mersey). The loop runs through a new platform at James Street (Britain's busiest station outside London), curves north to a new station at Moorfields (close to Exchange), then south to a new station serving Lime Street main line station and the city centre, and finally runs through a deep-level platform at Central station to rejoin the original route shortly after James Street. All trains travel around the loop in a clockwise direction.

The new link line, whose viability was improved by the fact that 800m of defunct double-track tunnel could be incorporated, leaves the lines into Exchange north of the terminus and dives steeply (at a gradient of 1 in 30) under Exchange station to Moorfields where passages and escalators provide interchange with the deeper loop line.

The new link line opened on 2 May 1977, when electrification to Kirkby was also inaugurated, and a week later the loop line was commissioned, but initially serving James Street and Central stations only. Lime Street and Moorfields (Low Level) were opened later in 1977, and passenger services were also restored

Right:
Duke Street Junction on the Liverpool underground, where the down line of the Edgehill spur joins the down track from Hough Green into the link. This photograph shows how the invert of the ex-CLC tunnel has been lowered to allow the line to drop to the level of Central Low Level station.
Gordon Whiting Photography

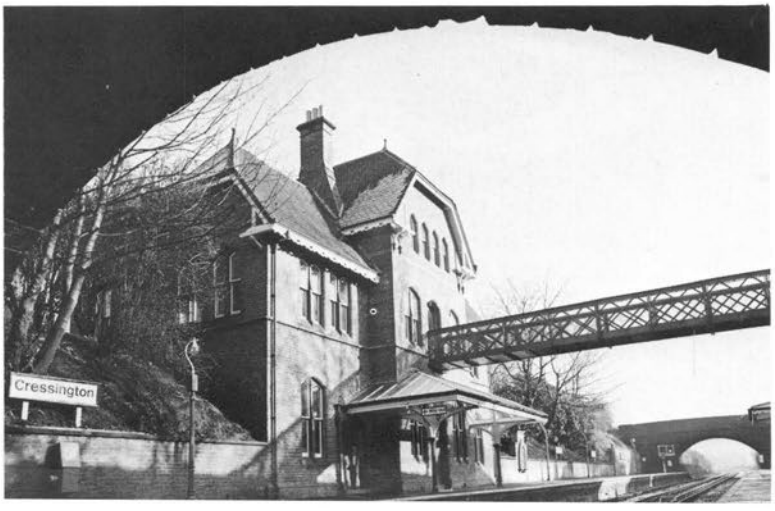
Left:
The Liverpool link and loop lines under construction in 1976. The new link line on which Southport and Ormskirk trains will run through to Moorfields and Central Low Level is seen heading towards its tunnel mouth on the left. On the right are the doomed old tracks heading into Liverpool Exchange. *Gordon Whiting Photography*

over the newly electrified line to Garston on 3 January 1978. The intermediate stations between Liverpool Central and Garston were in sufficiently sound condition to be reopened but at Garston a new station and rail/bus interchange was developed.

Pending the delivery of 64 new three-car Class 507 750V dc units (similar to the Class 313 stock introduced on the Great Northern lines) the link and loop services used ex-LMS-designed three-car units of Classes 502 and 503 fitted with emergency end doors for use in the new tunnels.

In anticipation of the opening of the link, Liverpool Central finally closed on 29 April, although it had lost its glory long before. Indeed no less than six of its original 10 platforms had been taken out of commission and some had been used to improve car-parking facilities. The closure was marked by an enthusiasts' special organised by British Rail and hauled by Class 47 No 47441. This special formed the last passenger train to leave the station, at 23.32.

Class 507 units were delivered from 1978 and were later joined by Class 508 units transferred from the Southern Region. In 1985 a three-car Class 503 set was restored to 1938 LMS maroon livery.



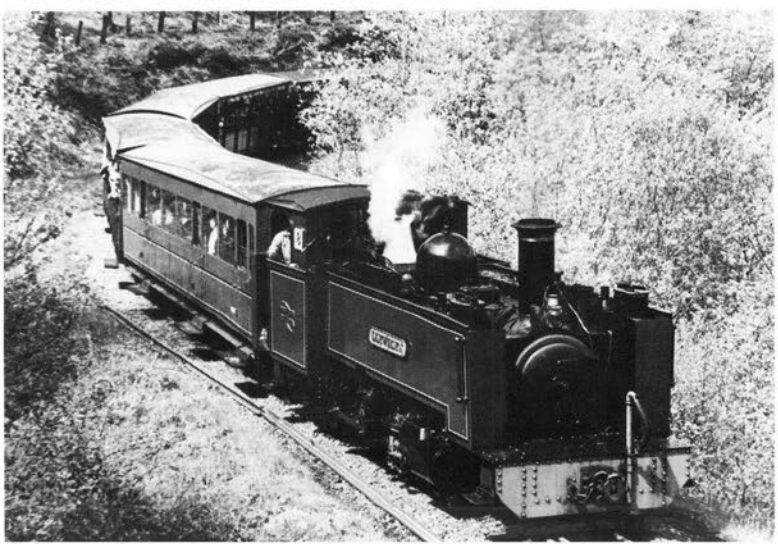
Left:
The final stage of the Merseyrail loop and link project was the reopening of the 8km southerly section to Garston (closed in April 1972) on 3 January 1978. The newly restored line passed through Cressington, a listed building in a conservation area which was lovingly restored with the help of Liverpool City Planning Department and grants of £8,000 from the Historic Building Council and £1,000 from the Liverpool Heritage Bureau. *British Rail*

Narrow Gauge and Private Railway Developments

Just as the introduction of HST services on the Western Region was to do, the modernisation work at King's Cross and the new lines in Liverpool augured well for the future of BR in 1977, so developments on BR's only narrow gauge line and on existing and newly preserved railways boded well for the future of steam services.

On BR's Vale of Rheidol line, which celebrated its 75th anniversary in Jubilee Year, the return of 2-6-2T No 9 *Prince of Wales* in lined blue livery with a new polished metal BR emblem on the cab sides, the installation of drinking water and refreshment facilities at Devil's Bridge, and the proposed conversion of No 7 *Owain Glyndwr* to oil-burning on an experimental basis, indicated a more positive attitude towards the future of the line. Subsequently the three locomotives were repainted in different but relevant liveries and the coaches were restored in chocolate and cream livery, a pleasing contrast to the inappropriate BR rail blue paint applied unsympathetically in the late 1960s.

Elsewhere, new preserved lines opened for business. In Hampshire, the Winchester & Alton Railway Co Ltd made history when it obtained its Light Railway Order direct (effective from 31 March) without the more normal two-stage procedure of obtaining a transfer from BR and started passenger services between Alresford and Ropley on 30 April. 'N' Class 2-6-0 No 31874 *Aznar Line* hauled the first train for the three-mile journey on the line which became known as the 'Watercress Line', and which has subsequently extended the full 10 miles from Alresford to link up with British Rail's electric services at Alton. The closure of the Alton-Winchester route in 1972 had been a



Right:
The new livery introduced to the Vale of Rheidol narrow gauge line in 1977, and the more positive attitude to its future which this implied, is worn by 2-6-2T No 8 *Llywelyn* in this view of the 10.15 service from Aberystwyth approaching Devil's Bridge on 29 May 1979.
Michael J. Collins

cause célèbre, requiring not only two closure enquiries (in 1968 and 1970) and two further public enquiries, but also causing the Ombudsman severely to criticise the Department of Transport for not seeking an independent audit of the figures presented by BR in support of closure.

Further north, near Peterborough, the five-mile Nene Valley Railway was formally opened on 1 June from Wansford to Orton Mere and the inaugural train was double-headed by French Nord 4-6-0 Compound No 3.628 (built 1911) and Swedish 2-6-2T No 1178 (built 1914) hauling ex-Southern Railway 4COR electric multiple-unit set No 3142. This line has specialised in the preservation and restoration of international motive power and stock but without ignoring British interests, and in 1986 opened a 1½-mile extension to within a few minutes' walk of the centre of Peterborough.

To the west of Peterborough, the Great Central Railway (1976) plc raised over £200,000 by share issue in 1976 to enable it to purchase land and track between Loughborough and Rothley. Sufficient money had been raised by the summer of 1976 to enable 2¼ miles of track to a point south of Quorn & Woodhouse to be purchased. This short stretch was not considered viable on its own and so it was with great relief that a cheque was handed over to complete the purchase of the remainder of the five miles of track on 14 January 1977.

On BR's main lines preserved locomotives from all the four pre-Nationalisation 'Big Four' companies, as well as BR standard locomotives, saw service on excursions during 1977, achieving such success that in the following year BR for the first time sponsored standard-gauge steam-hauled trains on circular tours from York through Leeds and Harrogate, and the 'Cumbrian Coast Express' from Carnforth to Sellafield. In 1977 ex-GWR 4-6-0 No 6000 *King George V* — the doyen of main line preserved steam — celebrated its own Golden Jubilee. Newcomers to the main line scene included the National Railway Museum's newly restored ex-LNER 2-6-2 Class V2 No 4771 *Green Arrow* and ex-SR 4-6-2 No 35028 *Clan Line* 'Princess Royal' class 4-6-2 No 6201 *Princess Elizabeth* appropriately represented the LMS in Jubilee Year.

Left:
During the first operating weekend following the opening of the Mid-Hants Railway, Class N 2-6-0 No 31874 and ex-Longmoor Military Railway 0-6-0ST No 196 are seen between Ropley and Alresford on 1 May 1977. *Brian Stephenson*

Below:
French Nord Compound 4-6-0 No 3.628 and Swedish 2-6-2T No 1178 double-head the inaugural train on the Nene Valley Railway out of Wansford on 1 June 1977. *G. A. Richardson*

King's Cross Clears its Throat

The final stage of the King's Cross-Sandy track rationalisation and resignalling scheme had been authorised in 1971. It involved resignalling of 83½ route miles of the East Coast main line to Sandy, the Cambridge branch as far as Royston, the Hertford Loop and the former London Transport Moorgate Branch, and was completed during nine weeks of intensive activity from 28 January to 4 April 1977, when the track layout between Gasworks Tunnel and the platforms at King's Cross was completely remodelled and resignalled.

The engineers initially considered phased work based on weekend possessions spread over a period of at least 40 weeks but at the end of 1974, when the suburban electrification work was well in hand and the diversion of inner suburban services to Moorgate was anticipated to take place in May 1976, an alternative plan for a nine-week period of concentrated work involving total possession of parts of the terminus was proposed and preferred for both operational and passenger marketing reasons. The delay in the inauguration of the Moorgate service caused the work to be deferred from its originally planned October/November 1976 timetable, but — after taking the gamble and accepting the adverse publicity of introducing the suburban service in November 1976 before all the new units had been delivered — it was found just possible to carry out the work early in 1977 to avoid the knock-on consequences of running into the 1977/78 timetable and increased summer traffic levels.

Remodelling, which included the closure of some suburban platforms rendered unnecessary by the Moorgate diversion, was carried out from west to east. During the first five weeks, platforms 7 to 10 were out of commission; platforms 4, 5 and 6 were only out of use during the weekend of 5 and 6 March;

Right:
The complicated trackwork at King's Cross before remodelling and electrification in 1977. On the left is the separate York Road platform serving the up suburban line to Moorgate via the Widened Lines, and the lines through Gasworks Tunnel on that side have since been closed. The signalbox has also been demolished, and to the far right suburban platforms 11-15 and the loco servicing sidings have also been closed. *British Rail*

Left:
On 8 June 1977, Class 31 No 31402 hauls empty stock into King's Cross under the Holloway Flyover realigned and rebuilt for use by up slow passenger services. The original flyover had been used by freight services only.
Brian Morrison

platforms 1 to 3 were dealt with thereafter. The main gains from the remodelling were:

- A simplified track layout giving improved alignments to most platforms and higher line speeds together with the lengthening of platforms 1, 6, 7, 9 and 10.
- New crossovers between Holloway and Gasworks Tunnels with associated signalling to permit bi-directional working on all four lines in Gasworks Tunnel.
- Increased headroom in the south end of Gasworks Tunnel under Regents Canal.

The new track layout, in conjunction with the new flyover at Holloway brought into use in May and designed (unlike its predecessor) for passenger traffic, greatly reduced conflicting train movements, made provision for additional traffic anticipated by contemporary proposals for a new London airport at either Maplin or Stansted, and reduced maintenance costs by removing from use the eastern bores of both the Gasworks and Copenhagen Tunnels.

Other work at the terminus intended to improve the lot of the inter-city traveller about to enjoy the delights of HST travel from

Left:
At a special ceremony at York on 7 September 1977 the first HST delivered to the Eastern Region, No 254001, was handed over by British Rail Engineering Ltd to Geoffrey Myers, General Manager of the Eastern Region.
Ernest Sanderson

KING'S CROSS OUTER SUBURBAN ELECTRIFICATION

Right:
The Class 141 Cravens two-car DMUs of which two sets (with car No E56456 leading) were photographed leaving Copenhagen Tunnel on 20 November 1976, were replaced from 3 October 1977 by Class 312 electric units.

King's Cross over the modernised trackwork included resited ticket barriers, improved catering facilities and repairs to the 1852 train shed, all of which had to be carried out within the constraints of the Grade 1 listing of the structure.

The press preview of the 1977/78 timetable on 26 April brought a Western Region HST set (No 253020) to King's Cross to carry press representatives to Peterborough and back, and another HST also on loan from Western Region (No 253026) was hired by the Prince's Trust and the Lea Valley Railway Club to form a special 'Silver Jubilee' service from King's Cross to Edinburgh on 23 July 1977. The first eight-coach unit intended for Eastern Region service (No 254001) was handed over in a special ceremony at York by BREL on 7 September in preparation for the full HST service in May 1978. Outer-suburban electric services from Royston and Hitchin into King's Cross began on 3 October when Class 312 units in two-tone blue and grey livery began to take over passenger workings as they were delivered.

On the same date, electric services should have been introduced between Witham and Braintree, but the inauguration was postponed because of a labour dispute among train drivers on the Eastern Region.

Below:
Details of the new Class 312 unit can be seen in this official view of No 312003. The Class 312s were based closely on the earlier Class 310 design, the most conspicuous external difference being the provision of smaller flat window glasses in the cab ends to increase protection for the driver from the effects of vandalism. *British Rail*

APPENDICES

Below:
The new powerbox and colour light signals at London Bridge await commissioning in the shadow of the soon-to-be-demolished older box. The photograph was taken in August 1975. *Kevin Lane*

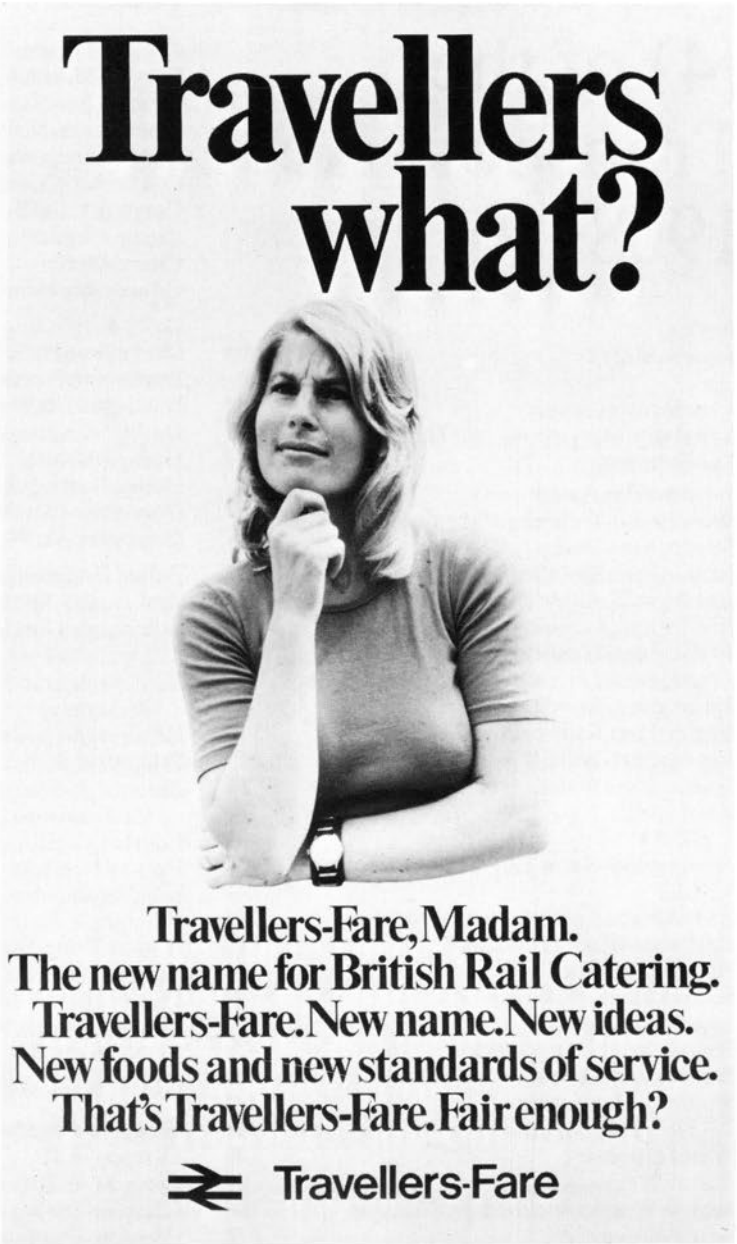
1. The Board's Obligations and Constraints

British Rail's obligations derive broadly from the following sources:

Transport Act 1962	'It shall be the duty of the Railways Board . . . to provide railway services in Great Britain . . . and to provide such other services and facilities as appear to the Board to be expedient, and to have due regard . . . to efficiency, economy and safety of operation.'
Transport Act 1968	'. . . to secure that the combined revenues of the authority and of its subsidiaries taken together are not less than sufficient to meet their combined charges properly chargeable to revenue account, taking one year with another.'
EEC Regulation 1191/69 Section 1 General Provisions	'. . . such obligations may be maintained in so far as they are essential in order to ensure the provision of adequate transport services' *(Article 1, para 2).* 'Financial burdens devolving on transport undertakings by reason of the maintaining of the obligations referred to in para 2 . . . shall be subject to compensation' *(Article 1, para 4).*
Railway Act 1974 Direction by Secretary of State 19 December 1974	'. . . the British Railways Board shall from 1 January 1975 operate its railway passenger system so as to provide a public service which is comparable generally with that provided by the Board at present.'
	These obligations must be related to subsequent financial constraints imposed upon the Board.
Statement by Secretary of State House of Commons June 1975	'I have set the Board a short-term target of limiting passenger support payment for 1976 to no more than the present level in real terms. For the longer term I propose to set ceilings for the total level of support and borrowing within which the Board will have to manage the railways.'
The Attack on Inflation (Cmnd 6151) July 1975	'The present system of planning and control of public expenditure . . . needs reinforcing in appropriate programmes by placing a limit on the amount of money which the Government is prepared to pay in the year ahead towards the purchase of the planned volume of resources.'
Public Expenditure (Cmnd 6393) February 1976	'. . . consistent with the target which the Secretary of State has set the Board for 1976 of containing passenger grant requirement within its 1975 level in real terms it is now assumed that the grant will not be increased in real terms in subsequent years.'
Transport Policy White Paper (Cmnd 6836) June 1977	'No one can now say what provision for expenditure on transport the economic conditions of the country will make possible in the 1980s, but the Government hopes that the developing prospects will justify the case for some increase in railway investment as the plans for public expenditure are rolled forward.' 'A reduction of £20 million on revenue support to the passenger railway is expected by the end of the decade.' 'The Government must now set the Board two financial objectives. The first is to contain, and then reduce, subsidy to the revenue account for the operation of passenger services. The second objective is to eliminate any continuing requirement beyond this year for support to the other railway business. The freight and parcels business must, as the Railways Act 1974 intended, cover all the costs, including track costs, specifically attributable to carriage of freight.'
Public Expenditure (Cmnd 7049) January 1978	The level of support for the passenger services to meet the public service obligation is reduced from 1979/80 onwards in accordance with the policy announced in the transport White Paper.

Since 1 January 1975 the Board considers it has provided a public passenger service comparable generally with that provided at the date of the Direction by the Secretary of State on 19 December 1974. This will become more difficult in future years as replacement requirements increase. The Government has taken steps towards recognising the financing problems posed by replacement requirements (para 220, Cmnd 6836) but there is still a large difference between the current charge to revenue account and the current cost of assets used. Unless this gap is bridged, current financial constraints could preclude the Board from meeting its obligations.

Source: BRB Annual Report and Accounts, 1977.


Travellers what?
Travellers-Fare, Madam.
The new name for British Rail Catering.
Travellers-Fare. New name. New ideas.
New foods and new standards of service.
That's Travellers-Fare. Fair enough?
Travellers-Fare

Right:
In 1973 British Rail Catering became Travellers-Fare. This curiously ungrammatical brand-name helped to improve the image of this traditionally maligned area of railway operations.
Ian Allan Library

2. Grants in 1969 Under Section 39 (1) and Section 39 (4) of the Transport Act 1968

Service *Section 39 (1)*	£000
Aberdeen-Inverness	267
Aylesbury-Marylebone (via Harrow)	279
Ayr-Stranraer	213
Barrow-Whitehaven	185
Barry Island-Treherbert/Merthyr	701
Birmingham-Derby	64
Birmingham-Stourbridge-Kidderminster	130
Birmingham, Snow Hill-Langley Green	56
Birmingham-Leamington Spa	260
Birmingham-Lichfield	279
Birmingham-Leicester-Nottingham	149
Birmingham-Redditch	59
Birmingham-Lapworth-Stratford	44
Birmingham-Walsall (via Aston)	159
Birmingham-Walsall (via Soho)	85
Birmingham, New Street-Wolverhampton (HL)	151
Birmingham, Snow Hill-Wolverhampton (LL)	121
Birmingham-Kidderminster-Worcester	149
Blackpool-Blackburn-Colne	411
Bletchley-Bedford	89
Bodmin Road-Newquay	89
Boston-Skegness	10*
Bournemouth-Weymouth	479
Bradford-Blackpool	58
Bradford-Manchester	292
Brighton-Portsmouth	951
Bristol-Salisbury	106
Bristol-Severn Beach	81*
Bristol–Weston-super-Mare–Taunton	165
Bristol-Weymouth	318
Bristol-Worcester	28
Broad Street-Richmond	376
Bury-Rawtenstall	128
Cambridge-Bury St Edmunds-Ipswich	154
Cambridge-King's Lynn	156
Cambridge-Peterborough	149
Cardiff-Hereford	10*
Cardiff-Penarth	67
Cardiff-Rhymney	266
Carlisle-Glasgow (via Dumfries)	17
Chester-Llandudno-Holyhead	538
Chester-Manchester	276
Cleethorpes-Newark	102
Cleethorpes-New Holland	81*
Colchester-Ipswich	19
Colchester-Clacton/Walton	268
Coryton-Cardiff	49
Crewe-Chester	41
Crewe-Derby	317
Crewe-Shrewsbury	80
Dalry-Kilwinning-Largs	285
Darlington-Bishop Auckland	120
Darlington/Northallerton-Hartlepool	58
Darlington-Saltburn	334
Derby-Manchester	226
Derby-Matlock	104
Derby-Nottingham	135
Doncaster-Cleethorpes	172
Doncaster-Sheffield	115
Ealing Broadway-Greenford	63
East Anglia-Midlands/North of England	350
Edinburgh-Dundee-Arbroath (via Dunfermline)	98
Edinburgh-Dundee-Arbroath (via Kirkcaldy)	164
Edinburgh-Cardenden	95
Edinburgh-Falkirk-Stirling-Dunblane	121
Edinburgh-Glasgow (via Falkirk Grahamston)	54
Edinburgh-Kirkcaldy	211
Euston-Northampton-Birmingham	260
Edinburgh-North Berwick	55*
Edinburgh-Perth (via Kinross)	219
Euston-Tring-Bletchley	232
Euston-Stranraer	181
Euston/Broad Street-Watford	463
Exeter-Barnstaple	148
Exeter-Exmouth	70
Fort William-Mallaig	176
Glasgow-Aberdeen	65*
Glasgow-Ayr	467
Glasgow-Barrhead	82
Glasgow-Stirling-Dunblane	233
Glasgow-Dundee	240

Service *Section 39 (1)*	£000
Glasgow-East Kilbride	182
Glasgow-Shotts-Edinburgh	279
Glasgow-Fort William	222
Glasgow-Hamilton	335
Glasgow-Perth-Inverness	277
Glasgow-Paisley-Kilmalcolm	272
Glasgow-Kirkcaldy	20
Glasgow-Lanark	279
Glasgow-Oban	275
Glasgow-Suburban Electric, North	1,490
Glasgow-Suburban Stage I, South	1,077
Glasgow-Gourock/Wemyss Bay	774
Grantham-Nottingham	92
Haltwhistle-Alston	40
Hampshire (DMU)	754
Hereford-Shrewsbury	81
Hereford-Worcester	319
Huddersfield-Clayton West-Penistone	140
Huddersfield-Wakefield	45
Hull-Doncaster	142
Hull-Bridlington-Scarborough	177*
Inverness-Kyle of Lochalsh	177
Inverness-Wick/Thurso	557
Ipswich-Felixstowe	79
Ipswich-Lowestoft	173
Isle of Wight	126
Kentish Town-Barking	235
Keswick-Carlisle	109
King's Cross-Cambridge (stopping service)	118
King's Cross-Hertford-Hitchin	833
King's Cross-Welwyn Garden City	534
King's Cross-Peterborough (stopping service)	205
King's Cross-Royston	223
Lancaster-Morecambe	69
Leamington Spa-Stratford	73
Leeds-Barnsley-Sheffield	276
Leeds-Bradford	149
Leeds-Doncaster	53
Leeds-Goole	99
Leeds-Harrogate	211
Leeds-Huddersfield	84
Leeds-Hull	286
Leeds-Liverpool	196
Leeds-Morecambe	186
Leeds-Scotland	43
Leeds-Rotherham-Sheffield	92
Leicester-Peterborough	101
Lincoln/Grantham-Boston	197
Lincoln-Nottingham	179
Liskeard-Looe	35
Liverpool Exchange-Wigan-Bolton	319
Liverpool-Runcorn-Crewe (EMU locals)	235
Liverpool Central-Gateacre	67†
Liverpool-Warrington-Manchester Central	448

Service *Section 39 (1)*	£000
Liverpool Central-New Brighton	112
Liverpool Exchange-Ormskirk	331
Liverpool Exchange-Ormskirk-Preston	61*
Liverpool Central-Rock Ferry	134
Liverpool-Southport (EMU)	300
Liverpool Lime Street-Southport (DMU)	67
Liverpool Central-West Kirby	146
Liverpool-St Helens-Wigan	284
Liverpool Street-Bishop's Stortford/Hertford East	91*
Liverpool Street-Bishop's Stortford	185*
Liverpool Street-Broxbourne	14*
Liverpool Street-Broxbourne/Hertford East	324*
Liverpool Street-Chingford	207‡
Liverpool Street-Enfield	322‡
Liverpool Street-Gidea Park-Shenfield	277
Liverpool Street-Chelmsford-Witham	87
Llandudno-Blaenau Ffestiniog	71
Machynlleth-Pwllheli	232
Maidenhead-Bourne End-Marlow	83
Maiden Newton-Bridport	32
Manchester-Altrincham	299
Manchester-Preston-Blackpool	558
Manchester-Bury	358
Manchester-Buxton	362
Manchester-Warrington-Chester	165
Manchester-Crewe (via Stockport)	432
Manchester-Crewe (via Styal)	306
Manchester-Glossop/Hadfield	299
Manchester-Stalybridge-Huddersfield	53*
Manchester Exchange-Liverpool Lime Street (via Patricroft)	110
Manchester-Romiley-New Mills	336
Manchester Victoria-Oldham-Rochdale	454
Manchester-Chinley-Sheffield	27
Manchester-Colne	510
Manchester-Bolton-Wigham-Southport	662
Manchester-Stafford (via Stoke)	552
Manningtree-Harwich	77
Marylebone-Aylesbury (via High Wycombe)	518
Middlesbrough-Whitby	196
Montrose-Dundee-Perth	176
Newcastle-Carlisle	262
Newcastle-Alnmouth-Edinburgh	216
Newcastle-Liverpool	61
Newcastle-Sunderland-Middlesbrough	337
Newcastle-South Shields	180
New Holland — Barton-on-Humber	17*
New Mills-Sheffield	81
Newport-Bristol	106
North Tyneside	642
Norwich-Cambridge	191
Norwich-Lowestoft	141
Norwich-Sheringham	44*
Norwich-Yarmouth	51

Service *Section 39 (1)*	£000
Ore-Brighton and branches	586
Ormskirk-Preston	37*
Oxford-Leamington	92
Oxford-Worcester	65
Paddington-Newbury-Bedwyn	153
Paddington-Reading-Oxford	419
Paddington-Reading	165
Paddington-Slough	235
Penistone-Sheffield	52*
Plymouth-Gunnislake	82
Plymouth-Saltash-Liskeard	80
Preston-Barrow	271
Preston-Blackpool	111
Preston-Windermere	156
Reading-Basingstoke-Salisbury	118
Reading-Redhill-Tonbridge	279*
Retford-Cleethorpes	70
Retford-Lincoln	81
Rock Ferry-Helsby-Chester	190
Romiley-Rose Hill	10*
Rugby/Coventry-Birmingham	227
Rugby-Nuneaton-Stafford	136
Runcorn-Helsby-Chester	43
St Erth-St Ives	37
St Pancras/Moorgate-Luton-Bedford	343
Salisbury-Exeter	562
Sheffield-Chesterfield	8
Sheffield-Retford	94
Shrewsbury-Aberystwyth	319
Slough-Windsor	76
South-East Area — SR	9,777
Springburn-Cumbernauld	153
Stafford-Birmingham	82
Stockton-Stalybridge	104
Stourbridge Junction-Stourbridge Town	30
Stratford-Cheshunt	59*
Stratford-North Woolwich	31*
Swansea-Carmarthen-Milford Haven	295
Swansea-Llanelli-Shrewsbury	110*
Tottenham Hale-North Woolwich	107*
Truro-Falmouth	89
Twyford-Henley	95

Below:
A desolate scene at Killiecrankie Viaduct on the Glasgow-Inverness line on which the 17.25 service from Glasgow was photographed on 6 May 1968. This line attracted an initial annual grant of £277,000.
C. W. R. Bowman

Upminster-Grays-Tilbury	151
Watford Junction-Croxley Green	46
Watford Junction-St Albans	45
Whitehaven-Carlisle	245
Wickford-Southminster	111
Witham-Braintree	51
Wolverhampton-Chester	496
Worcester-Birmingham (via Barnt Green)	16
Wrexham-New Brighton	155*
York-Harrogate	172
York/Selby-Doncaster/Hull	124
York-Leeds	139

Service *Section 39 (1)*	£000
York-Newcastle	218
York-Scarborough	289
York-Sheffield	77
York-Shrewsbury	23
Total: Section 39 (1)	59,683

Service *Section 39 (4)*	£000
Alton-Winchester	82
Ashford-Hastings	140
Ayr-Kilmarnock	13*
Bangor-Caernarvon	47
Barnstaple-Ilfracombe	66
Birmingham–Henley-in-Arden–Stratford	231
Bourne End-High Wycombe	40
Bradford-Keighley	58
Bridgend-Treherbert	97
Bristol-Bath Spa	30
Bristol-Severn Beach	50*
Cambridge-St Ives	54

Service *Section 39 (4)*	£000
Cleethorpes/New Holland-Immingham	19*
Cleethorpes-New Holland	46*
Colchester-Sudbury	61
Colne-Skipton	70
Crewe-Preston (locals)	77*
Darlington-Richmond	5*
Dundee–Newport-on-Tay	13*
Eastleigh-Romsey	17*
East Lincolnshire services	363*
East Lincolnshire services (excl Boston-Skegness)	10*
Edinburgh-North Berwick	100*

Service *Section 39 (4)*	£000
Exeter-Okehampton	60
Hull-Bridlington-Scarborough	154*
Kidderminster/Hartlebury-Bewdley	44
King's Lynn-Hunstanton	20*
Kirkcaldy/Cardenden-Thornton-Leven	51*
Kirkham-Fleetwood	85
Leeds/Bradford-Ilkley	127
Liverpool Exchange-Ormskirk-Preston	68*
Lowestoft Central-Yarmouth South Town	43
Manchester-Stalybridge-Huddersfield	21*
Manchester-Tyldesley-Liverpool	81*
Manchester-Woodhead-Sheffield Victoria	151*
Manchester-Penistone	73*
New Holland–Barton-on-Humber	11*
New Mills-Hayfield	43
Newport (Mon)-Gloucester	80
Norwich-Dereham	32*
Norwich-Sheringham	53*
Nottingham-Rugby	70*
Paignton-Kingswear	50
Rochdale-Bolton	129
Romford-Upminster	52
Romiley-Macclesfield	49*
Rose Hill-Macclesfield	40*
Skipton-Carlisle	62
Stratford-Worcester	17*
Swansea-Llanelli-Shrewsbury	158*
Taunton-Minehead	113
Uckfield-Lewes	5*
Wareham-Swanage	53
Whitland-Pembroke Dock	72
Wrexham-New Brighton	101*
York-Sowerby Bridge-Manchester	141
Total: Section 39 (4)	3,998

	£000
Section 39 (1) Total	59,683
Section 39 (4) Total	3,998
	63,681
Less: Adjustment for Board's new capital accounting rules (estimate)	2,600
	61,081

* Grant for part of year.

† This service also receives financial support from Liverpool Corporation.

‡ A varying level of grant was payable at different periods of the year.

3. BR Traffic Statistics 1968-1977

	1968	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*
Passenger journeys (millions)										
Ordinary and reduced fares	532,234	516,690	526,413	499,499	445,803	427,868	436,459	432,559	403,893	407,430
Season tickets	298,838	288,545	297,454	316,014	307,805	300,402	296,327	282,136	304,581	294,633
Total passenger journeys (millions)	831,072	805,235	823,867	815,513	753,608	728,270	732,786	714,695	708,474	702,063
Total passenger miles (millions)	17,835	18,400	18,895	18,720	17,615	18,500	19,200	18,800	17,800	18,200
Average distance per passenger journey (miles)	21.46	22.85	22.93	22.96	23.37	25.4	26.3	26.3	25.1	25.9
Freight traffic (million tons):										
Coal and coke	122,694	119,298	112,521	107,451	88,012	99,415	86,616	97,237	97,001	93,752
Iron and steel	38,743	39,377	39,531	33,250	31,242	34,950	30,509	25,727	29,455	25,963
Other	45,867	42,412	46,940	48,211	49,588	52,155	49,299	45,064	42,580	43,574
Total freight miles (million tons)	14,693	14,120	15,014	13,458	12,858	14,043	13,230	13,040	12,706	12,534
Average length of haul (miles)	70.88	70.22	75.45	71.24	76.16	75.29	79.49	77.61	75.17	76.76

Source: BRB Annual Reports and Accounts.

4. BR Assets as at 1 January 1968-1977

	1968	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*
Locomotives:										
Steam	362	3	3	3	3	3	3	3	3	3
Diesel	*4,742	†4,326	†4,183	†4,126	†3,756	†3,683	†3,639	3,619	3,508	3,338
Electric	341	329	328	323	318	317	333	352	352	351
HST power cars	—	—	—	—	—	—	—	2	2	42
Passenger carriages:										
Locomotive hauled	9,307	8,370	7,888	7,699	7,215	7,265	7,152	7,154	6,826	6,365
DMU	3,988	3,810	3,649	3,621	3,581	3,467	3,468	3,427	3,402	3,367
EMU	7,492	7,348	7,332	7,358	7,033	7,071	7,173	7,156	7,225	7,228
HST	—	—	—	—	—	—	—	8	8	151
Non-passenger carrying coaching stock	7,401	7,259	7,092	6,508	6,182	5,933	5,551	5,501	5,439	5,262
Freight vehicles	446,623	437,412	415,832	370,917	302,127	265,556	248,682	241,429	216,367	187,000
Stations (passenger)	2,616	2,511	2,423	2,409	2,362	2,355	2,355	2,358	2,361	2,358
Routes open for traffic (miles):										
Total route miles	12,447	12,098	11,799	11,643	11,537	11,326	11,289	11,258	11,189	11,168
Passenger route miles	9,471	9,375	9,095	8,980	9,002	8,932	8,931	8,967	8,952	8,956
Route miles closed	748	405	310	161	120	118	61	38	73	33

* Plus 19 main line diesel locomotives on hire from the manufacturers.
† Plus 50 main line diesel locomotives on hire from the manufacturers.

Source: BRB Annual Reports and Accounts.

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